



Published on the 1st of each Month by

THE INDIA RUBBER PUBLISHING CO.

No. 150 NASSAU ST., NEW YORK.

HENRY C. PEARSON,
EDITOR.HAWTHORNE HILL,
ASSOCIATE.

Vol. 29.

MARCH 1, 1904.

No. 6.

SUBSCRIPTIONS: \$3.00 per year, \$1.75 for six months, postpaid, for the United States and Canada. Foreign countries, same price. Special Rates for Clubs of five, ten or more subscribers.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank draft, Post Office Order, or Express Money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Post order, payable as above.

DISCONTINUANCES: Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

COPYRIGHT, 1904, BY

THE INDIA RUBBER PUBLISHING CO.

Entered at New York Post Office as mail matter of the second-class.

TABLE OF CONTENTS.

	PAGE.
Editorial:	
"Take it or Leave it".....	183
The Congo and the Madeira.....	183
Minor Editorial.....	184
Rubber Planting Interests.....	185
[Notes on Plantation Companies in Mexico, Ceylon and West Africa.]	
The Art of Vulcanization.....	187
Problems of Rubber Mill Management. An Assistant Superintendent.....	189
The India-Rubber Trade in Great Britain.....	191
[The Motor Car Industry. Manufacture of Zinc Oxide. Vulcanizing in Ammonia. Franz Clouth's Book. David Bridge & Co. Droylesden Rubber Works. Tire Cement. Personal Mention.]	
Death of Carl Maret (With Portrait).....	193
Deaths in the American Rubber Trade.....	193
New England Rubber Club's Annual Dinner.....	195
Recent Rubber Patents.....	198
[United States. Great Britain. Germany. France.]	
The Manufacture of Wool and Knit Boots.....	201
[With 9 Illustrations.]	
The Textile Goods Market.....	203
American Imports of Rubber Goods.....	204
Rubber Goods in Commerce.....	206
New Goods and Specialties in Rubber (Illustrated).....	207
[Rubber Sponge Bath Mat and Bath Belt. Milwaukee Patent Puncture Proof Tire. Protection Against Drowning. "Kleanwell Tingle Sponge." "Nigriette" for Protecting Cables. New Waterproof Garment. "Excelsior" Tire Protector. "Papyrus" Packing.]	
Miscellaneous:	
Stock Cutter for Rubber Work (Illustrated).....	199
Rubber Shoe Trade in Canada.....	192
Lectures to Rubber Workers.....	194
Manufacture of Window Strips.....	197
An Old Rubber Man Retires (C. N. Squires).....	199
Rubber at the Sportsman's Show.....	208
The Rubber Bowling Hall.....	211
The Para Rubber Plantation Co.....	216
News of the American Rubber Trade.....	213
The Rubber Trade in Chicago..... Our Correspondent	209
The Rubber Trade in Akron..... Our Correspondent	210
The Rubber Strike at Trenton..... Our Correspondent	211
The Great Baltimore Fire.....	212
Review of the Crude Rubber Market.....	217

"TAKE IT OR LEAVE IT."

IT often happens that a wise adage, an ancient saying, or a neat catch phrase so takes hold upon the memory that it is made to serve occasions for which it is inherently unfit. To all those who buy or sell, that which heads this article is quite familiar. It means, in plain English, quit bargaining—now or never—"put up or shut up." It is conspicuously discourteous, and is used only by the petty salesman who is infatuated with himself, or the wealthy commercial giant who intends to die fighting.

For use in our own free country it is to be discountenanced, as it makes enemies needlessly, but what of it in the Orient, where all trading is founded on courtesy? One would think that such a phrase would never fall from the lips of an American salesman in dealing, for example, with a wealthy Chinese merchant. And yet not long since it did occur. A capable, energetic Yankee had shown samples of goods to a merchant who, by the way, was alive to their quality and cheapness, but instead of closing the sale in a moment, the would be buyer invited the other to take a cup of tea. The salesman was impatient, refused the tea, and said, "Here's the proposition; take it or leave it." At once the merchant left it. Nor did the matter end there. At his trade guild that evening he told the story, and every member decided that they did not care to deal with such a barbarian, and not one order could he book in the great city that he was then visiting.

This salesman probably does not know to-day that his impatient attitude, together with that vicious catch phrase, shut him out for all time from a fine market, but his keenest competitor, not an American, knows and profits by it. Were the case an individual rather than a typical one, it would not be worth quoting; but it is not, and unless our salesmen recognize the fact that they must be adaptive as well as aggressive, they are bound to be left. Tactful hustle will go anywhere. "Take it or leave it" hustle is of no use at home and less abroad.

THE CONGO AND THE MADEIRA.

WE have given space to frequent references to the Congo railway—a line about 200 miles in length, around the cataracts in the lower Congo river—for two very definite reasons. The first is that, but for this railway the important rubber development in the Congo Free State would have been impossible, so that its construction has been a matter of concern to the whole rubber industry. The second reason is that the success of the Congo railway has always appeared to us to point to the most practical means for overcoming the similar natural barrier to an equally rich rubber region in South America.

The river Madeira, an important affluent of the Amazon, receives the waters of the Beni and other Bolivian streams which drain a wide rubber district, but owing to a long series of cataracts in the Madeira the cost of transportation by that route is almost prohibitive, and there is no alternative route that is more favorable. A railway of the same length as the Congo road would connect the naviga-

ble sections of the Madeira now separated by the series of falls.

It is an important fact that the Congo railway has proved a profitable enterprise. Before it had been half completed—while goods had still to be carried by porters over half the route—the transportation of merchandise began to yield returns in excess of running expenses, and during the six years of operation of the whole line there has been a fair dividend on the shares, after meeting the charges on the funded debt. It may be urged that the Congo railway is not altogether a commercial enterprise, on account of the use made of it by the state in developing its various undertakings. At the same time, the state has charged itself with transportation costs, so that the balance sheet of the railway company shows larger receipts than expenses. The company's report for the sixth year—to June 30, 1903—now before us, shows capital outstanding to the amount of 29,847,500 francs [= \$5,760,568] and about 50,000,000 francs in bonds. The operating expenses amounted to 35½ per cent. of the gross earnings. The net profits applicable to dividends, after meeting interest charges and reducing the bonded principal were 2,508,365 francs [= \$484,114.42]. On its face, at least, this is a good showing.

The Congo railway has a monopoly of traffic in its region, and will always have; so would a railway around the Madeira falls. An important part of its traffic is for the account of the state; the same would be true of the Madeira line if it should be taken advantage of by Bolivia as a means to the development of that country. It has been urged, in relation to the Congo road, that the rates charged over it, and made possible by peculiar conditions, were too high for a legitimate commercial undertaking. By analysing its income account for 1902-03, we arrive at the following average charges for freight per metric ton:

On the ascending trains.....	\$88.93
On the descending trains.....	78.17

Regarding the steamboat charges above the railway, we have no data. Ocean freights from the lower terminus of the railway probably are not excessive, compared with charges from other African ports. Now let us look at the cost of transportation between Pará and the Beni river country, by the Madeira route, over the cataracts, as supplied to THE INDIA RUBBER WORLD by a commercial house a year or so ago, per metric ton:

From Pará to the Beni.....	\$791.30 to \$1158.00
From the Beni to Pará.....	289.50 to 328.10

The time required for the ascending trip was mentioned as about 230 days; for the descent, about 70 days. Merchandise can be transported from Europe to points well in the Congo interior within a month, and the return trip made in equal time.

The fact that some commerce exists over the Madeira route, in spite of the existing obstacles, points to a development of trade only awaiting better facilities. If that commerce can bear the present high charges, there is reason to assume that considerable expansion would follow a reduction of rates. The need is real—if we consider only the

rubber business—for the now promised Madeira railway, and it is to be hoped, from the recent indications of a more practical statesmanship developing in the two nations most nearly interested, that the project will not end in talk.

A RECIPROCITY TREATY between the United States and Brazil has gone into effect, which is mentioned here because among the products of this country to which Brazil gives a preferential rate of 20 per cent. below the regular tariff on imports are manufactures of India-rubber. While every opening for increased trade relations between the two republics should be welcomed, THE INDIA RUBBER WORLD sees in the present case no reason for departing from its position that diplomatic agreements alone do not sell goods. We of the United States buy Brazilian rubber and coffee because they are necessities, and Brazil is the best source of supply, but this fact imposes upon the latter country no obligation to buy manufactured wares from New York if some other market appears preferable. The demand for rubber goods in Brazil is not yet large, but if it were, the fact that we produce rubber goods of a quality and at prices not excelled elsewhere would not give us an even chance with competitors working more actively to market their products. Last year the United States sold to Brazil only \$22,037 worth of rubber goods. During five years past the annual average has been only \$16,426. Great Britain probably sells in that market six times as much, and Germany even more, both countries showing an annual gain, and it is hardly probable that a tariff concession of 20 per cent. will change the relative position of American rubber goods, other conditions remaining the same.

THERE IS NOT SPACE ENOUGH in THE INDIA RUBBER WORLD for half the news that comes from Colorado regarding the preparations for extracting rubber from certain wild plants in that state, and as any abridgement of the news might fail to do justice to the subject, we must postpone any comprehensive treatment of it until arrangements can be made for the enlargement of our paper. We may take the liberty to note, however, that this enterprise is being prosecuted with entire disregard of the rubber manufacturers, whose opinion of the product does not seem to be of interest to the Colorado promoters, which suggests the thought that, having a new material, they may be planning to utilize it in establishing an entirely new industry. Perhaps at last has been found the business which is to knock out the "rubber trust." From the esteemed Denver Post of February 16 we learn that there are two original rubber concerns in Colorado, each with the best method for preparing the new rubber, and that these are in "open warfare," which certainly is better than trying to strangle each other in the dark. One company, it seems, has been incorporated with \$1,000,000 capital, while the other, not incorporated, has not revealed its measure of financial strength. We can only hope that the best rubber may win.

THE PROGRESS IN RUBBER PLANTING in the Far East has become so important in its extent, in results already attained, and in prospective returns, as to merit much fuller treatment than it has yet received. For this reason the Editor of THE INDIA RUBBER WORLD has made a personal tour of the planting districts, with a view to making an exhaustive report on the same, in the hope that it will prove of interest and value to rubber planters generally. The report will begin to appear in our next issue.

RUBBER PLANTING INTERESTS.

BATAVIA COMPANY.

[Plantation "Batavia," near Santo Domingo, in the district of Culcatlan, state of Oaxaca, Mexico. Office: Wells building, Milwaukee, Wisconsin. See THE INDIA RUBBER WORLD, August 1, 1903—page 373.]

THE president of the company Ceylon E. Lyman, on January 26, started for Jamaica to visit a rubber plantation there, meaning to return by the company's estate. On February 15 the inspector chosen by the shareholders—Ben L. Edgerton, of Oshkosh, Wisconsin—was to start on his inspection tour. C. M. Kendall, general agent, informs THE INDIA RUBBER WORLD that they now have 20,000 rubber trees growing, from three to four years old, with 70,000 seedlings ready for transplanting, and that they expect eventually to have 4000 acres in rubber. The company is now one year old, having acquired an estate on which planting had begun. The company's *Bulletin* No. 4 states that they expect the 20,000 trees mentioned to be productive by 1907. Recently seeds of twenty-five different tropical plants have been obtained from Ceylon with a view to testing their economic value in Mexico.

THE SAN MIGUEL PLANTATION CO.

[Hacienda "San Miguel," state of Vera Cruz, Mexico. Office: Chamber of Commerce building, Chicago. See THE INDIA RUBBER WORLD, April 1, 1903—page 226.]

The plantation of this company has been visited during the month by Richard Walsh, president, and H. E. Rose, secretary and treasurer and general manager of the company, and others from Chicago and Toledo, Ohio, who are interested in it. The party includes Dr. L. J. Liffing, of Toledo, who is making the annual inspection in behalf of the shareholders. Mr. Rose informed the *Mexican Herald* that 520 acres had been planted in rubber and 500 acres in sugar cane. There had been sold to a neighboring sugar mill, for their first year, 20,000 tons of cane for \$40,000, gold. It is intended to increase the acreage of rubber and sugar each to 1000 acres.

COSTA RICA RUBBER CO.

[Plantation, San Carlos, Costa Rica. Office: No. 203 Currier building, Los Angeles, California.]

THIS company has been reorganized since its first mention, as the Costa Rica Development Co., in THE INDIA RUBBER WORLD of May 1, 1902 (page 254), the principal officers remaining the same. There are now owned 2500 acres of land between the San Carlos and Tres Amigos rivers, in Costa Rica, and 60 miles from Greytown, Nicaragua. The company now have 25,000 two year old rubber trees and 15,000 one year old trees growing, with 100,000 trees in the nursery, besides 5000 two year old cacao trees, and 15 acres in tropical fruits. An official of the company writes to THE INDIA RUBBER WORLD that the company was formed by business men of Los Angeles on the solid plan of "put your hand in your own pocket, and pull out the dollars to work with," which has been followed to the present time, with such satisfactory results that, in view of the ultimate success which they feel is assured, they are now offering some of their treasury stock to the public, to obtain funds for further development, the idea being to continue planting until the whole estate has been covered. Already plans are under way for forming a nursery of 300,000 rubber plants this year in addition to the transplanting which has been arranged for.—At the second annual meeting of shareholders, at the office in Los Angeles, on February 8, the following directors were reelected: L. W. Blinn, H. Jevne, Octavius Morgan, A. C. Harper, B. A. Benjamin, E. B. Merrill

R. H. Wilkinson, and C. S. Hogan, and F. B. Hudson was elected in place of W. B. Raymond. The secretary, C. S. Hogan, made a favorable report on the condition of the company, and the treasurer, E. B. Merrill, reported enough funds on hand to assure the carrying out of this season's plans, with only one-fifth of the capital stock of \$500,000 sold.

ORIZABA RUBBER PLANTATION CO.

[Plantation "Chival," Salto de Agua, state of Chiapas, Mexico. Office: No. 915 Dearborn street, Chicago, Illinois. See THE INDIA RUBBER WORLD, August 1, 1902—page 253.]

A FINANCIAL statement of this company, for the year ended November 30, 1903, appears in their bulletin, *Chiapas News*, for February, amounts being expressed in Mexican silver. Receipts were \$88,000.48 and expenditures \$83,837.10. Labor, subsistence of laborers, and salaries cost \$54,038.26. For merchandise for the company store \$13,670.92, was expended, and store sales reached \$11,151.72. Store profits to September 30, amounting to \$2001.89, were applied to dividend account, together with \$3000 derived from the sale of corn. Certificate holders were paid a 5 per cent. dividend on December 15, amounting to \$4207.22.—The annual inspector chosen by the stockholders is Howard Little, of Newton, New Jersey, who should now be on the plantation. President James B. Sanford, of Chicago, is also in Mexico.

CHIAPAS RUBBER PLANTATION CO.

[Plantation "San Luis," near Palenque, department of Palenque, state of Chiapas, Mexico. Offices: Crocker building, San Francisco.]

THIS company has been referred to frequently in THE INDIA RUBBER WORLD as the Chiapas Rubber Plantation and Investment Co., under which name it was incorporated in California, July 7, 1899. On December 12 last, circular letters were sent to all the investors in the company, in relation to reorganizing under the shorter name printed above. The responses were so favorable that it has been decided to carry out the new plans, pursuant to which a new corporation has been formed, under the laws of Arizona, with 25,000 shares of capital of the par value of \$200. The old company has sold its plantation to the new for 17,500 shares of the capital of the latter, leaving 7500 shares of the new company in the treasury. The old company will remain in existence until it shall have purchased all of its outstanding harvest certificates of the stock of the new company. The reason for the change is explained as follows: Under the original plan the holders of harvest certificates would be entitled, by the time the rubber plantation became productive, each to take his interest in the form of a proportionate amount in acreage of the lands. Realizing that such division of the property might not lead to the best and most economical management in the end, the plan was proposed of conveying the property to a corporation in which all the certificate holders should be stockholders, with a permanent title in an undivided business, under the control of experienced men in permanent positions, and uniform dividends to all the investors. But if every stockholder should take a parcel of the land and have it cultivated through his own agent or employes the total cost would be greater, and the possible profits largely diminished. Another point made was that much of the land in the large holdings of the company is not suited for rubber, while the old plan of organization did not permit the company to plant anything but rubber. The land is well adapted for cattle raising, for which interest a good market exists, and on the advice of the resident manager it is proposed

to devote a considerable acreage to grazing. The circular to the investors stated that about 5000 acres had been planted with rubber trees, forming the largest rubber plantation in Mexico and probably in the world.

THE PLAYA VICENTE PLANTATION CO.

[Plantation near Playa Vicente, state of Vera Cruz, Mexico. Office: No. 245 Main street, Dallas, Texas.]

INCORPORATED under Colorado laws; paid up capital, \$100,000. Location on the isthmus of Tehuantepec, on the Tesechoacan river, 18 miles from Perez, on the Vera Cruz and Pacific railway. Own 7200 acres, with some development work begun when the tract was acquired. Some rubber has been planted, 600 trees to the acre, and additional planting is to be done yearly. The proposition to investors is to sell acreage, not stock, at \$300 per acre, in installments, if desired. Officers: M. B. Johnson (Dallas, Texas), president; W. L. Stowers (Denver, Colorado) and E. S. Emmert (Dallas), vice presidents; E. W. Smith (Denver), secretary; The Fidelity Savings Association (Denver), treasurer and trustee. Dr. W. S. Cockerill, of the City of Mexico, is the resident Mexican representative of the trustee. Eugene Griffin is plantation manager.

AGRICULTURAL EXPERIMENT STATION IN MEXICO.

THE concession for the first agricultural experiment station in Mexico has been made to The Consolidated Ubero Plantations Co., through Señor Thomas Moran, a member of the Mexican house of deputies, and a director of the company named. Under the terms of the concession the company are to erect buildings, on plans to be approved by the government, to cost \$7000, after which the government will appropriate \$10,000 for the aid of the station, to be conducted on similar lines with agricultural experiment stations in the United States. The company will control the station for five years, when it will become the property of the government. The station is to be devoted to the testing of tropical plants and seeds from different countries, to determine what are best adapted to Mexico, with the idea of promoting general agriculture in that country. The new station will be located on the company's lands at Ubero, on the isthmus of Tehuantepec; their offices are at No. 89 State street, Boston.

GOING TO MEXICO TO STUDY RUBBER.

A PARTY of twenty-five persons from various parts of the country now at the Waldorf-Astoria have been sightseeing here since Tuesday. They are on their way to Mexico to study rubber culture on the Isthmus of Tehuantepec, and start at 11 A. M. to-day by the Ward Line steamer *Havana*. The party includes O. W. Kennedy, late general superintendent of the H. C. Frick Coke Co., Uniontown, Penn.; S. M. Graham, vice president of the Fayette Title and Trust Co., Uniontown, Penn.; J. E. Keith, of the Keith Manufacturing Co., Canton, Ohio; R. J. Linton, capitalist, Belle Vernon, Penn.; the Rev. W. D. Atkinson, Norwalk, Ohio; Dr. E. L. Norton, Madison, Ohio, and John A. Schauweker, of the jewelry firm of Schauweker Brothers, of Cleveland Ohio.—*New York Tribune*, February 18.

KAMERUN (GERMAN WEST AFRICA.)

[See THE INDIA RUBBER WORLD, December 1, 1901—page 71.]

THE Moliwe Pflanzungs-Gesellschaft, of Hamburg, Germany, at the end of their fourth year (July 1, 1902—June 30, 1903), reported that 76½ acres of their estate at Moliwe, in this colony, had been planted with rubber, 63 acres being devoted to *Kickxia elastica*, the tree which yields the Lagos rubber. About 10 acres are planted to *Castilloa elastica*, and the remainder to various other species. During the year over 100 acres were prepared for the planting of 60,000 *Kickxia* trees, in addition to the 28,500 now standing. No further planting of this species

will then be done until the profits of *Kickxia* culture have been established. The rate of growth of the older trees of this species has been most satisfactory, while the later planting has suffered from the ravages of caterpillars. The *Castilloa*, as mentioned in former reports, does not seem so well suited for this district, many of the plants having been destroyed by beetles. *Hevea Brasiliensis* appears to thrive well, and the company intend experimenting with it for shading cacao, for which purpose about 3000 seeds have been planted recently at distances of 18×18 meters and also 13½×13½ meters. The company was organized in 1899, with a capital of 1,100,000 marks [= \$261,800]. The principal interest of the company is in growing cacao, of which more than 1000 acres have been planted.

YIELD OF WILD "CASTILLOA ELASTICA."

THE Pan-American Planters' Co. (Chicago) in a recent bulletin present a photograph of the tapping of a wild rubber tree on their estate which measured 75 feet in height and which apparently had been tapped many times before and very carelessly. Owing to this fact and the resulting roughness of the bark, the latex flowed irregularly and much of it was lost. Twelve pounds were saved, however, which should have yielded five pounds of dry rubber. The latex was preserved, however, in bottles to be distributed as samples.

THE PANAGULA RUBBER CO., LIMITED.

THIS company (registered at Colombo October 30), has been organized to acquire from the government of Ceylon a tract of land in the Kelani district, for the forming of a rubber plantation. The nominal capital is 500,000 rupees [= \$162,216.66], in 5000 shares, of which the initial issue is 1250 shares. The registered office is at Hatton.

TO REPORT ON RUBBER IN LIBERIA.

MR. ALEXANDER WHYTE, late curator of the botanic station in Uganda (East Africa), has retired from the government service on a pension, after having spent forty years in botanic work, mostly in the tropics. Evidently he does not intend to stop work, however, since he has undertaken to visit Liberia and make a report on the native rubber and the prospects for cultivation, for the Liberian Rubber Syndicate, Limited.

GUTTA-PERCHA PLANTING IN BORNEO.

THE Netherlands Gutta-Percha Co., Limited, a Singapore venture, has now a steamboat plying in the neighborhood of Banjarmassin in its business interests as regards the gathering of Gutta-percha leaves. The company pays a small premium for every newly set out gutta plant. It has about 50,000 guilders [= \$20,000] available for this purpose in southeast Borneo during the next five years, and reckons then on having 10,000,000 gutta plants ready for plucking at easily accessible places. The plants set out now are expected to be productive in five years' time.—*The Straits Times*.

RUBBER PLANTING COMPANY PUBLICATIONS.

THE Tehuantepec Rubber Culture Co., New York.—Report on plantation progress to October, 1903 [4 pages], with financial statement separate.

Joliet Tropical Plantation Co., Joliet, Illinois.—Joliet Tropical Plantation Bulletin. Vol. II, No. 1—August, 1903. 4 pages.

Batavia Co., Milwaukee, Wisconsin.—Mexico, The Land of Sunshine and Fortune. [Referring to the company's rubber planting proposition.]

Batavia Co., Milwaukee, Wisconsin.—Easy Road to Independence [being details of financial plans of their rubber plantation in Mexico]. 21 pages.

Rio Michol Plantation Co., San Francisco.—Reports of C. A. Westenberg, president, and Dr. Allen H. Suggett, a stockholder [on a visit to the plantation, in September, 1903]. 6 pages.

THE ART OF VULCANIZATION.*

It is only recently that it has become understood that in vulcanization there is a chemical union of rubber and sulphur. In fact, it is so recently, *that manufacturers generally cannot be said to have had their attention called to it, until within the past few months.* The first authoritative announcement of the fact in a manner to command the attention of manufacturers in the United States was the publication in England early in 1903 of Dr. Weber's most excellent work on the "The Chemistry of India-Rubber." But the circulation of such a work in this country is necessarily slow, notwithstanding that it is a work of such a character that it should not only be read, but carefully studied by every manufacturer.

Very shortly after the publication of Dr. Weber's work there was published, also in London, a translation of another excellent work, published in France, by T. Seeligmann, a French chemist, and others, entitled "Indiarubber and Gutta Percha." Even at the date of this publication, Seeligmann did not agree with Dr. Weber to the proposition that in vulcanization there is a chemical union of rubber and sulphur, but thought that perhaps the mixture of rubber and sulphur was in the nature of an alloy. Quoting in his work the opinions of Payen, Heinzerling, Unger, and Donath on the subject, Seeligmann summarizes their views as follows:

These authors therefore consider vulcanized rubber as a sort of alloy of the organic substance of the rubber with the sulphur or with a sulphide or even with the chloride, bromide or iodide of sulphur. *This condition is not combination properly so called, from which the formation of a well defined chemical individuality would result. It differs, however, from a simple solution or mechanical mixture.*

Seeligmann's own opinion is given as follows:

From this point (248° F.) the sulphur modifies its condition; it melts, at the same time that the pores of the rubber are sufficiently dilated to allow of the gradual absorption of the liquid vulcanizer—sulphur. But at the same time as the chemical action commences, the liquid sulphur combines with the adhesive hydro carbide, and forms with it a new chemical body or rather an alloy. This action naturally continues if the process be prolonged at the same temperature, so that it penetrates further and further into the mass.

Aside from Dr. Weber's work we do not remember any public announcement in this country of the result of recent analyses which showed conclusively the chemical nature of the reaction until THE INDIA RUBBER WORLD referred to it in a recent issue.

Thus the knowledge of the true nature of the chemical reaction in the vulcanizing process cannot be said to have become known to manufacturers generally until a very recent period. Prior to that they had been engaged for upwards of half a century in developing and extending the manufacture of vulcanized rubber goods in ignorance of the true nature of the process. They developed the business from an insignificant amount in 1844 until it has become one of the leading industries of our land. The application of vulcanized rubber has been continually extended until it can be safely said that to-day there is not an art or a science that is not more or less dependent upon its use. But it is only the physical characteristics of vulcanized rubber that at present concerns the manufacturers or the public as it has during the past fifty years. While this is so, the chemical nature of the problem should in nowise be overlooked. Now that the true nature of the reaction is understood we may

confidently look forward to discoveries in the near future that will be of inestimable benefit to the manufacturer.

It is popularly believed that the art of vulcanization consists in submitting crude rubber to the action of heat in connection with sulphur, whereby the characteristics of the rubber are so changed as to produce an article which is strong, durable, and which possesses all the qualities usually associated with vulcanized rubber. This however is an error, as crude rubber is seldom, if ever, submitted to the vulcanizing process. No use can be conceived for crude rubber that might be vulcanized by any process. It is only rubber that has been through the various processes of washing, drying, masticating, compounding, and calendering that is ever submitted to vulcanization. In each of these operations its properties are changed in some respect. By the time that rubber compounds are ready for shaping into the various articles for which they are intended, the crude rubber has lost nearly all of its distinguishing physical characteristics. It is the province of the curing, the final step of the vulcanizing process, to restore to these compounds the original qualities of crude rubber, and to add the properties of resisting the action of heat, cold and its ordinary solvents. Aside from these latter no new physical qualities whatever are the result of vulcanization.

The art of vulcanization includes every step in the process from the crude rubber to the finished product. In each of these steps, the extent of the change which takes place in the properties of the rubber depends entirely on the judgment of the operator. In each step before the final one, the workman handles the stock and is thus enabled to judge when his part of the operation has been properly performed. The final result, however, is materially affected by any error in judgment on the part of any operator. In order to ensure a successful result of the vulcanizing operation each step of the process must be performed with a due regard for the operations which have preceded or which may follow.

The submission of rubber to the action of heat at a vulcanizing temperature does not of itself result in vulcanized rubber. Something more is necessary. This part of the process, like each other part, must be conducted with reference to the preceding operations, for the result is absolutely controlled by the manner in which those operations have been performed. To this end, the workman proceeds in accordance with a formula given him which is adapted to the particular class of goods to be vulcanized. No matter how skilful the workman may be, he cannot in applying the formula control the result. As the operation progresses he does not handle the goods, he does not see them, and, in all operations under pressure, he cannot see them until the operation is completed. There is thus no opportunity or need of exercising any discretion. But even here a large experience is necessary. For often it is not possible to follow the formula exactly. Sometimes the temperature rises too fast, sometimes too slowly. He must then be able to judge how much more time or how much less, will fulfil the requirements of the formula. But this is not a discretion that controls the result.

The art of vulcanization cannot be learned from books—only from experience. This, however, does not imply that information obtained from books is of no value. On the contrary, the information given in books by investigators of ability and thorough acquaintance with the art, must be exceedingly valu-

* Copyright, 1904, by THE INDIA RUBBER WORLD.

able. But such information, without the ability to apply it, which can only be acquired through long experience, can be of little or no value to its possessor.

It is evident therefore that opinions concerning the process as to how it is or should be conducted are absolutely of no value unless they are expressed by persons having perfect familiarity with every part of the art. Because one manufacturer conducts his operations in a certain manner, it cannot be said that another manufacturer who proceeds differently does not understand the art as well as the other.

When vulcanization was first discovered only Pará rubber was known, and vulcanized rubber had a very limited application, being largely confined to articles for personal use. Since that time a large number of varieties of rubber have been discovered, none of which however are equal in value to Pará rubber, and all of which must be treated differently. If the manufacturers of to-day had only Pará rubber to deal with, and if the public were willing to pay a fair price for goods of a high quality made from it, the art would be comparatively easy to practice. But the ever increasing demand of the public for cheaper goods, having, however, the same appearance as those of a high grade, compels the manufacturer to be continually devising expedients to meet it. The most natural course to meet this demand is to employ cheaper rubbers, and to adulterate the compounds with substitutes and the various filling ingredients. To make such changes is generally difficult for the manufacturer.

To the ordinary observer it would seem perfectly simple to employ cheaper grades in place of the high grades. He can see no more difficulty in doing this than there would be in substituting in a leather shoe a cheaper grade of leather in place of a high grade—a substitution which is very simple and which only results in another grade of goods.

It must be considered, however, that the cheaper grades which constitute about half of the world's production of rubber cannot be worked, compounded, or cured in the same manner as when Pará rubber is used. For instance—if a compound consisting of 12 pounds dry fine Pará rubber, 6 pounds litharge, 6 pounds whiting, and 6 ounces of sulphur, a very common compound, be submitted to the ordinary dry heat temperature, it vulcanizes readily in 32 minutes, or in 12 minutes if the vulcanizing atmosphere be impregnated with sulphur, the temperature being the actual temperature of the rubber itself. If, however, upper Congo red balls, one of the best grades of African rubber, be substituted for the Pará in this compound, there is not the slightest trace of vulcanization in 32 minutes if heated in air—nor in 12 minutes if the atmosphere be impregnated with sulphur. Neither is there any trace of vulcanization after an exposure of an hour or even two hours, though the percentage of sulphur be increased to 5 per cent. When the vulcanization does take place after a longer exposure the result is unsatisfactory. If the vulcanizing medium be metallic without pressure, which will effectually exclude the air during the submission of the compound to heat, the same compound requires an hour for vulcanization instead of the 32 minutes, thus showing that the difficulty is inherent in the rubber itself and not the result of any injurious action of the air. But this process cannot be substituted for the usual dry heat process. To successfully employ one of the cheaper grades of rubber in the dry heat process in place of Pará or to employ one of the numerous substitutes that are on the market, or to use a much larger quantity of whiting or other adulterant, requires a whole series of experiments on the part of the manufacturer before he can learn how to make the necessary changes in his process, and after that, many more of less unsuccessful trials on the part of the workmen.

It does not follow at all that because certain of the cheaper grades of rubber can be successfully vulcanized by one process that they can be successfully vulcanized by another process. Certain grades of rubber that are vulcanized by the steam process have hitherto resisted all attempts to vulcanize them by the regular dry heat process. Neither does it follow that if the manufacturer is successful in thus cheapening his compound that the goods made from it will prove durable. It is therefore necessary before putting them on the market to lay samples aside for many months in order to ascertain whether the compounds are durable or not. If they stand this test the manufacturer should even then lay aside further samples of the goods to guard against possible elements of decay which often do not show themselves until after a year or two.

A well known illustration of the necessity of following this practice has been seen in the experience of one of the largest, best equipped, and best managed factories in the United States, and one that has at its head the best expert talent that can be found in the world. Some time since, not more than two or three years or so, it was found that the goods of this company which had been distributed among the trade were proving defective after being used. As time passed, more and more reports of defective goods were received. These increased to such an extent that a thorough investigation was made, when it was found that quite a portion of the goods made in this factory during several months were proving to be defective. But this was not the end of the trouble. The defective goods had become so mingled with sound goods that it was found practically impossible to separate the sound from the unsound. It was therefore necessary to recall a very large amount of goods that were in the dealers' hands, and to sell these with all others on which any suspicion could be cast, for what they would bring as unsound goods.

And yet these goods had been daily examined thoroughly by the best expert talent to be found and passed as sound goods. As none of the defects developed for several months, and as a year or more elapsed before the extent of the damage was ascertained, it can be readily seen that the loss on these goods must have been very heavy, whereas if the defects could have been discovered at the time the goods were made or within a short time afterwards, the defects could have been remedied, and the loss thus reduced to a moderate amount.

It is thus seen that the art of vulcanization is by no means a simple one; that it cannot be learned from books or formulas and that long experience is necessary for its successful practice; that it is applied only to rubber which has been properly compounded and worked, and that the result of applying the usual formulas in the final vulcanizing process depends entirely on the manner in which such compounding and working has been performed; that it is difficult for the manufacturer to use cheap grades of rubber or substitutes in place of Pará rubber, and, that when such substitution has been apparently successful, the greatest care must be taken to prove the durability of the goods made from the changed compounds.

One of the greatest fields in the art for investigation at the present, if not the greatest, is to discover means whereby the cheaper grades, which have the same chemical composition as the Pará rubbers, may be vulcanized by the dry heat process so as to equal the latter in strength and durability.

A TARIFF DECISION.—An importer of rubber recoil pads at Portland, Oregon, claimed them to be dutiable as manufactures of India-rubber, but the collector imposed the rate of duty on "parts of guns," which was confirmed by the general appraisers when an appeal was made.

PROBLEMS OF RUBBER MILL MANAGEMENT.

By an Assistant Superintendent.

THE really modern rubber factory should have for superintendent a man who has years of practical experience back of him, and who has learned, among other things, that the business of rubber manufacturing is progressive, and that to hold his own as a superintendent he must not only progress with it but push. Such a man will strive to provide machinery that will enable him to produce a pound of finished product at a cost that will allow of its finding a quick purchaser at a fair percentage of profit.

What, then, is the dominant proposition that constantly confronts the factory superintendent? Evidently this: What is the lowest price per pound at which rubber goods acceptable to the trade can be made? Into this proposition enter the entire gamut of processes from washing the crude rubber to packing the finished product.

How many men engaged in this industry absolutely know this? How many on the other hand assume a cost or guess at it?

The manufacturer who guesses at the cost of his goods, not only reflects upon his own acuteness, but deliberately paves the way to disaster. For there is no process, however complicated, but should be laid bare, and the more complicated the process, the greater the necessity for knowing, for the complicated process is the expensive one.

The superintendent should be a good reader of human nature. He should know his men, and he should know also that firmness, good judgment, and kindness will produce more goods at a minimum cost, than the harsh and frequently tyrannical methods adopted too often. He should also be a good planner, laying out and carrying forward the various processes, guarding constantly against "lost motion." This requires method; method requires thought and executive ability. But all of these conditions can be conceived, and sent a long way on the road to realization, through what a very successful manufacturer of rubber goods called the "scientific use of the imagination."

WAGES AND DISCIPLINE.—The average workman needs some sort of stimulant above and beyond the mere question of wages, to incite him to do his best. Without such a stimulus he becomes "ratty," and will make his job as easy as possible. The superintendent, on his part, however, should know just what constitutes a day's work on a mill, or a press, or a table, in any process, and knowing this is in a position to remedy abuses on their inception.

Factory discipline should be exacting. An employé is a cog in the complete machine; he must be in perfect adjustment. His usefulness must be so well established that there is no doubt that it "pays" to keep him. It is not a matter of sentiment, but the fact of pounds that he can produce. His capacity should be known, and wherever practicable he should be paid in accordance with it, and he should be encouraged always to do his utmost.

The fact established that the superintendent "knows his business" and "will stand no nonsense" acts as a stimulant to the average workman. Without it, it is remarkable how soon he lapses into a state of acute carelessness or shiftless indifference. With it, he becomes a producer. Foremen should be encouraged to a friendly rivalry with each other in bringing their departments to the high-water mark of efficiency.

Heads of departments are necessarily chosen for the special knowledge they possess, but they should be encouraged to take a broad view and wide interest in the general work of the factory, and appreciate that coöperation is one of the keynotes in any manufacturing proposition. As they are looked up to and copied by the workmen under them, they should understand the necessity of being on hand promptly for each session of work, and that intelligent, painstaking effort, in execution of all matters entrusted to them, is essential to their own success.

WASTE AND INSPECTION.—The daily product of "waste," consisting of trimmings from all sorts of goods, cured and uncured, is always an important item, but its limits are so well defined that it can be readily controlled. Waste, however, from goods spoiled in manufacture through improper construction or carelessness, is a much more serious matter, causing frequently great loss in time, and material, and, when such goods reach a customer, in prestige. There are at least two safeguards against this: First, a department devoted to experiment and test, in which a new stock can be put through its paces and its qualities thoroughly known. Second, the most rigid inspection as the work goes forward, and by the different foremen through whose hands the materials or product must pass, and finally by an expert inspector upon whose acumen dependence can be placed to pass on the finished article. As an adjunct to such a system, the plan of daily deliveries of all trimmings and spoiled goods to a designated location, will act as a constant check on a careless workmanship, and serve the especially desirable end of keeping departments clean and in order. Intelligent care is a paying investment.

BASIS FOR FACTORY ORDERS.—A factory that manufactures to fill customers' orders only, and nothing for stock, not infrequently finds on its hands an accumulation amounting to thousands of pounds of mixed stocks and other material, the excess on orders previously executed. This situation is never entirely satisfactory to the superintendent, and on the other hand it ties up too much money in the wrong way. This surplusage can be guarded against by ascertaining in advance the exact quantities required for each order, adding sufficient to cover waste, and then confining the compounding to actual requirements. Moreover, quantities required should be worked out by a clerk employed for the purpose, and not by foremen. This method has several advantages. It limits the compounding of a special or rarely used stock to actual requirements; it acts as a check on extravagance in making samples; it impresses workmen with the necessity for special care; and when misfortune or carelessness has depleted a stock before an order is completed, it brings the matter directly to the notice of the superintendent.

Not alone does this method of figuring up requirements help the factory, but it serves the very desirable end of posting the purchasing department as to the quantities of all commodities required to fill orders. To illustrate: One thousand feet of $\frac{3}{4}$ inch hose is ordered by a customer or for general stock. It calls for, let us assume, 94 pounds of mixed stock for the tube, 68 pounds of mixed stock for the cover, 68 pounds of friction for the friction, and 39 pounds duck. This information has been gathered from estimates, and verified in actual weights; therefore a safe working basis is assured. Dissecting all orders in this manner, whether they aggregate 100 pounds or 100,000

feet, the quantities of material that will be required can always be known in advance, and upon such information buying orders should be based, and the "guessing" method eliminated.

Doubtless most large factories have such a system, but many small factories have none, and hence are more or less at sea throughout each season as to just how much material they require, with the result of constantly running short, and thus delaying the execution of orders, or finding on their hands a surplus possibly unsuited to orders then in hand, and in which a considerable value in money is tied up. Certainly this represents a weak spot in any factory system, if the lack of some such method as above outlined can with propriety be called system.

Every factory large or small, therefore, for its safeguard, should possess knowledge on at least two important points: First, the quantities required with which to execute orders; second, the cost per pound to execute them. Some factories have what are called "theoretical estimates." That is to say, estimates based on past experience. Good as far as they go, perhaps, and may be relied upon in a carefully managed factory. But even then they should be checked against, or verified frequently. The variation in condition and character of ingredients, the changes in *personnel* of the working force, brought about by additions or dismissals, thus affecting the skill attained in any department of work; accidents or incidents more or less avoidable, such as breakage of molds, machinery, or appliances, each and all affect the cost of a particular article, or the entire daily product, so that review of and revision of cost should be as carefully attended to as the monthly balance sheet from the ledger. The prices of crude material are constantly changing; no two invoices of gum show the same percentage of shrinkage, hence the compounds should be looked after sharply and their cost revised, especially on a rising market. Every factory takes pains to have, in some convenient form, samples of all their mixed stocks, but the specific gravity of each is equally essential, as it makes a lot of difference in the quantity used to execute an order, whether a 25 cent stock has a specific gravity of .85, or 1.05. Yet I knew a prominent manufacturer, a few years ago, who actually did not know how to work out this simple but important problem. If there is a manufacturer who has maintained the "guessing system" and who proposes to verify his supposed costs, the chances are that a series of disagreeable surprises await him. Money is well spent that secures for a manufacturer the cold facts regarding his business.

THE MASTER MECHANIC.—The duties of this position are exacting and carry with it responsibilities second only to those of the superintendent. He should be preëminently a man who "knows that he knows." The superintendent may, on occasion, have "guessing" or experimenting to do, but the master mechanic, scientifically trained as he should be, should have the ability to so "set up" every piece of machinery that there can be no question as to its future successful operation. He must be equal to emergencies, with a cool head and quick judgment, and know that his arrangement of piping, shafting, belts, and pulleys is in strict accord with scientific adjustment and economical practice. On him lies responsibility for changes and repairs, and repairs and changes are constantly on the *tapis* in the modern rubber factory. He should appreciate that each piece of machinery is a unit, capable of producing well defined quantities of material or goods, and his care should be to see that, so far as his duties are concerned, it is up to the superintendent whether the goods are produced or not. A very good plan is to open an account with each piece of machinery, giving it a "No.," charging it with original cost, and

cost of installation, and making further charges for repairs and changes as they occur.

All such changes or repairs should be executed on registered orders issuing from the general office; otherwise "repairs" account becomes in time a blind item, that is dissected only after much backward labor. Such a method of registering orders for all repairs serves also the purpose of directing special attention to carelessness and neglect on part of employes, which, under the usual loose methods in common practice, would be kept *sub rosa* by the men most interested.

THE COMPOUNDER.—This position is one of especial trust, although the pay of such men would not as a rule suggest it. In his hands are placed the formulas to which a factory rightly attaches a particular value. He should be by nature and practice a careful man with whom the making of weights should be a second nature. Nevertheless, it should be part of the factory system to weigh mixed stocks each day, and check the weights against the compounder's report.

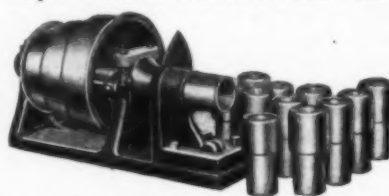
In the general treatment of factory help an exacting but broad gage policy should be pursued. And specially should the inventive faculty be encouraged. Labor saving devices are not uncommon in factories where proper encouragement is held out to the men. The American workman is naturally ingenious, and many a wealthy manufacturer can credit the foundation or continuation of his success to the inventive faculty possessed by some obscure workman in his employ.

To most factories there comes each year a season of dullness. Orders for the season are practically filled, the large contracts satisfied. Then is a good time to provide against next season's requirements by keeping the mills going merrily in reducing waste and scrap to "ground springs," thoroughly drying and sifting them, and storing them away against the urgent demands which are sure to come. This is also a good time in which to overhaul machinery, and give presses and pipes a coat of asphaltum, for no one item speaks so loudly of bad management as dirty appliances, rusty pipes and molds, and machinery out of repair.

The foregoing presents but a small portion of the problems with which the manufacturer of rubber goods is confronted, and which he is expected to solve. A business full of fascination for those who successfully grapple with it and a "hair-raiser" for those who fail.

STOCK CUTTER FOR RUBBER WORK.

THE illustration herewith shows a very convenient and rapid three speed power cutter for rubber work. It is specially adapted for cutting raw stock, from a tubing machine into suitable lengths for molding. The rapidly revolving cam-shaped knife severs the stock with a shearing cut as it is fed



through the proper size die against a stop which determines the length. Several dies, accommodating various sizes or shapes of stock, are shown grouped at one side of the illustration. These permit of cutting any sizes up to 1½ inches diameter and 2¼ inches long. Adjustment to required size, by changing dies, can be effected in one minute. The capacity of the machine, when belted according to the recommendation of the makers, ranges from 9000 to 15,000 pieces per hour. Designed and built by Holmes Brothers, No. 218 East Washington street, Chicago.

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

AS the demand for motor tires depends so much upon the motor building industry, no excuse need be made for saying a few words upon the latter. Compared with the optimism existing a year ago among manufacturers, a great change is noticeable at the present time, on all sides complaints as to the lack of business being rife. The fact that high priced motors are very difficult to sell may be attributed largely to the general depression in business or depreciation of incomes, with the consequence of there being less money to spend on luxuries. That is, among the well to do people. The wealthy people have bought their cars and do not wish to replace them every month. I was rather amused recently to witness the change in mind of a friend who a year ago told me that "the horse was doomed." At the time he was a motor car owner, only since then he has gone in for building cars and it is the losses he has experienced which have re-opened his eyes to the utility of the condemned horse. From what I can gather this instance is by no means an isolated one, and I hear of cars being sold below cost price to enable their constructors to realize some at least of their shut up capital even at a loss. Not that there is any need to take too gloomy a view of the prospect, because much the same depression exists in certain hunting centers, residences this season being unlet owing to many men having dropped hunting for the time being. The latest firm to go in for the motor manufacture is Crossley Brothers, Limited, of gas engine fame.

AN English half penny daily of wide circulation recently gave prominent notice to a process for manufacturing zinc oxide from waste blende in Wales and a great resuscitation of Welsh mining was confidently predicted. Of course there is nothing new in the idea though this particular process has its novel features, but up to the present none of the oxide prepared in the wet way from the ore has been found equal to that obtained by the combustion of metallic zinc, the source of the Vieille Montague brands. I understand that the newly advertised process has recently been investigated by a rubber manufacturer with results that cannot be considered satisfactory. I remember that some years ago, when a British works manager replaced the Belgian oxide by an American product, he found himself involved in serious trouble.

VULCANIZING IN AMMONIA. I NOTICED that a recent French patent (No. 329,519—1903) deals with the use of ammonia in vulcanizing. The goods are to be exposed to an atmosphere of ammonia at 140° C. for 40 or 50 minutes, and before taking out the surplus gas is to be absorbed in sulphuric or hydrochloric acid. Whether the process is now being adopted in France or elsewhere I have no information. I am referring to it chiefly because of its lack of novelty. As far back as 1882, Mr. Thomas Rowley, of Manchester, brought out the same process and obtained results showing that both the amount of sulphur and the time of vulcanization could be much reduced in the case of pure rubber goods, such as tobacco pouches. It must be confessed that though the idea was practically tried at rubber works, it does not appear to have been adopted, probably from the fact that ammonia is both an expensive and disagreeable product to use on a large scale. But I do not profess to be in a position to speak confidently as to the why and where-

fore of its non-adoption. I merely wished to draw attention to the recent patent as being only another instance of an old idea figuring in the patent lists of to-day.

FRANZ CLOUTH'S BOOK. THIS latest addition to the library of the rubber manufacturer will doubtless be reviewed from headquarters, but perhaps I may be allowed space to make a few comments as the result of my own perusal of it. While with his evident disinclination to accept to the full all that has recently been published as to the theory of vulcanization, he will number a large number of sympathizers. I expect there will be a certain amount of opposition to some of his generalizations. For instance, he says that Pará rubber takes longer to vulcanize than East Indian and other more soft and sticky qualities. It would be interesting to hear how far this view coincides with the ideas of other manufacturers on the point as a general statement, though under certain conditions it may hold true. I note that in his reference to rubber sponge (on page 130) he speaks of its want of durability, and tendency to become hard and brittle. This is what I have heard of it from some sources, while others speak of it in terms of much greater commendation. One is rather forced to the belief that the quality as found on the market varies. The vacuum drying of washed rubber is dismissed in a line; it would have been interesting if an author of such wide experience had given us his candid opinion of it. Apropos of this matter, I have recently heard of British manufacturers who are adopting the vacuum process on an increased scale. This book, like all other descriptions of rubber manufacturing, has a description of Gerard's process of vulcanizing in a bath of penta-sulphide of calcium. What would be interesting to know, however, about it, is if it is or ever was in practical use. The statement that the admixture of substitute with many kinds of raw rubbers tends to the preservation of the latter, is interesting, and should not be overlooked by the substitute manufacturers as an advertisement for their wares. Chemistry does not form a prominent subject of reference, though there is one statement that I feel inclined to challenge. He says (on page 236) in reference to Balata that this substance, like Caoutchouc, resists all corroding alkalies and also nitric acid. This is all right as regards alkalies, but surely it is an error to say that nitric acid does not attack it. Of course, as there is so much oxidized rubber in Balata, the action of the acid is not so violent as in the case of rubber, but it is a fact and only in due accord with what one would expect, that nitric acid has a most decided action and I should imagine that the appearance of the paragraph is due to laxity of supervision of the proofs. The other references to Balata are most interesting and the most complete which I have seen in print, though on the moot point as to where all the Balata goes to these pages are not conclusive.

DAVID BRIDGE & CO. THIS firm of rubber machinery manufacturers, whose works are at Castleton, near Manchester, have issued as a trade catalogue some articles which originally appeared in the *British Colonial and International Machinery Market*, and in which the wood cuts of machinery were supplied by the firm. This brochure is distinct from their larger catalogue which is the most complete of the sort I have seen—that is, where India-rubber and Gutta-percha machinery is exclusively concerned. Compared with American

productions there has always been a sedateness about the British catalogue which I personally have no desire to see transformed. There are, however, adventitious aids to securing attention at which no possible objection can be levelled, and in this category must be placed *inter alia* the catalogue under notice for its technical information, and that of the Dermatine company for its scientific survey of the raw materials from which its products are manufactured.

ONE of the novelties at the forthcoming motor show at the Crystal Palace will be this tire, which has now for some time occupied the attention of the De Nevers Tyre Co. of Bendon Valley, Earlsfield, London, S. W. Greater resiliency is claimed over the ordinary solid tire on account of the transverse grooves on the outer periphery permitting easy expansion on the part immediately under pressure without communicating stress all round. I propose to refer to this tire again when in possession of fuller testimony as to its worth.

THE DE NEVERS
GROOVED
SOLID TIRE.

As notified in this correspondence some two years ago, this concern was sold by auction to a syndicate who bought it as a speculation and not with any idea of restarting it as a rubber works. In the interval a good deal of the machinery has been sold, and now the whole property has been disposed of to the Stockport company, engaged in the manufacture of Markalite—a rubber substitute brought out by Mr. Markus, who was formerly engaged in the proofing trade at Fleetwood. I cannot say that I have come across any of this substitute, but the fact that the Stockport premises have proved too small for the business, is an indication of a considerable demand.

DROYLESDEN
RUBBER WORKS.

THE Manchester and District Cycle Show held at the St. James Hall from January 30 to February 6 did not produce anything of particular novelty. This year there were no motor cars and but few motor tires were on view.

The three rubber firms having stands were The Dunlop Co., The North British Co., and David Moseley & Sons, the latter showing their "flexifort" fabric, cycle tire tubes and covers, as also solid and "pram" tires. A memento consisting of a pure rubber pipe cover was given to visitors as an index of the quality of the rubber used in their tires. The Dunlop company, besides tires had a display of waterproof clothing, while the North British in addition to their well known makes of cycle tires, had the "Clincher-Michelin" motor tire on view. A special feature of the show as a whole was the motor cycle, which is undoubtedly increasing in popularity.

I EXAMINED recently a sample of liquid cement described as a prepared composition for the repair of cycle tires without the aid of rubber or solution. The solution was described as a patent. I found it to consist of a solution of rubber in bisulphide of carbon and this will at once account for its objectionable smell. I have no wish to say anything disparaging of this particular solution, which I have no doubt answers its purpose admirably, but I rather doubt if it is fair on purchasers to sell it without some warning as to its inflammability. It has been well shown that the dread in which naphtha rubber solution is held by carrying companies is largely due to misconception as to the degree of danger involved but about carbon bisulphide there can be no two opinions as to its danger. I suppose that by rubber solution the carriers understand solution in naphtha and I should think they would have a strong case in the event of an accident arising from the use of a more inflammable solvent. It is stated that this solution rapidly vulcanizes in the air after it is dry; loose statements such as these hardly inspire our confidence as to the technical qualifications of the manufacturers thereof.

MR. J. E. BAXTER, of the Leyland and Birmingham Rubber Co., has left for a tour in South Africa with some members of his family. I understand that he intends to motor from Cape Town to Johannesburg and the run should prove a good test of the capabilities of the

PERSONAL
MENTION.

Collyer tire.—I regret to announce the death, on January 30, of Mr. Harry Grimshaw, of the Recovered Rubber Co., Limited, and the United Rubber Co., Limited, of Clayton, Manchester. Mr. Grimshaw was a chemist of some repute and at one time in his career held the Dalton chemical scholarship at Owens College. In conjunction with Mr. Thomas Rowley he has been closely identified with several departments of the rubber trade for a good many years, his most recent appearance as an author being in a paper on Rubber Analysis, read before the Manchester section of the Society of Chemical Industry last session.—An interesting addendum to some recent remarks of mine in the connection of the rubber trade with Parliament may be made by announcing the selection of Mr. Philip H. Lockhart as Unionist candidate for North Wiltshire. He is a director of Messrs. W. & A. Bates & Co., Limited, of Leicester, and present chairman of the India-rubber Manufacturers' Association. His views on the fiscal question are those of Mr. Chamberlain and it will be interesting to see how far the Rubber Manufacturers' Association will follow his lead.—The retirement of Mr. William Weston from the position of chief chemist to the Admiralty under the age clause of the Civil Service regulations, has just taken place. A good many members of the rubber trade have made Mr. Weston's acquaintance during the long period he has reigned at Portsmouth dockyard and all will testify to his affable demeanor. All the same there are those who wish that the undoubted skill and energy with which he pursued his investigations into alloys and fuels, had led him to examine more closely into the adequacy of the tests which he applied in the case of India-rubber goods. I am not going into details, but my own opinion is that if some of the stringency with which he detected and animadverted upon an extra tenth per cent. of sulphur had been applied in other directions it would have been more in the interests of strict justice all round.

RUBBER SHOE TRADE IN CANADA.

NEW prices are to be announced by the Canadian rubber shoe manufacturers on March 1, which are expected to represent some such advance as has been made in the United States. The annual meetings of the Rubber Boot and Shoe Manufacturers' Association and the Wholesale Boot and Shoe Jobbers' Association were held at Toronto on January 19. At the Jobbers' convention it was decided to request the manufacturers to put on the market a special line in a second grade men's rubber boot and a second grade boys' and youths' arctic. It was stated that the average sale of men's arctics are 20 of second grade to every one of first grade, and it was urged that the same rule would apply to boys' and youths' arctics if such were available.—The *Canadian Shoe and Leather Journal* says that the rubber shoe business in the Dominion promises to be on a better basis than ever before. The Jobbers' association now embraces every wholesale handler of rubber footwear in the country, and absolute uniformity in selling price is thus assured. It is safe to assume that the discount for early orders will be larger than last year, as well as the regular trade discount. It is a matter of congratulation that the distance between the large store or combination of stores and the ordinary retailer is to be lessened, and a volume point fixed, and any retailer who sells the amount can have the same advantage as the largest buyer.

DEATH OF CARL MARET.

HARBURG (Elbe), January 23, 1904.

GENTLEMEN:

Herewith we discharge the sad duty of informing you of the sad death of

Herr Director CARL MARET,
Imperial Prussian Councillor of Commerce and Senator of the City of Harburg.

The honored deceased was a member of our company since its foundation, in 1856, and earned the highest merit in furthering its development.

We beg you to retain the deceased in kind remembrance.

Very respectfully,

VEREINIGTE GUMMIWAAREN-FABRIKEN
HARBURG-WIEN,

VORMALS MENIER—J. N. REITHOFFER.
L. HOFF.

THE German rubber industry has sustained a great loss by the death of its Nestor, Director Carl Maret, who died on January 22, after a brief illness, in his seventy-fourth year. Carl Maret was born in Berlin, July 31, 1829. He chose the profession of mechanical engineer, and after devoting several years to that profession at home, he came to the United States to gain further experience. We are without details regarding his life in America, though an early number of THE INDIA RUBBER WORLD mentions him as being employed at one time in the state of New Jersey, and as the India rubber industry had already become important in that state, it is possible that his attention was first directed there to this business.

He returned to Germany in 1856, at which time a new rubber factory was being planned by Albert and Louis Cohn, at Harburg a/d Elbe. Mr. Maret joined in the preparation of the plans, and later he entered the employment of the firm as engineer. Through his untiring devotion to his duties, and his inventive genius, he rose to the position of director of the works, when the company had developed into a rubber manufacturing enterprise of the first magnitude.

The Harburg works originally were equipped for the manufacture of rubber shoes only, but Carl Maret soon took up, with the initial owners of the works, the manufacture of all the new articles which helped to bring the rubber industry to its present importance. Moreover, he was among the first to take an interest in rubber substitutes based on oils, and developed their production in a high degree.

In the early "sixties" the Harburg plant passed from the possession of Aubert Gerard et Cie. to that of Menier, the great Parisian chocolate manufacturer, whose name was a household word all over the world. Menier became a senator soon after the disastrous war of 1870, and the French people, failing to understand how one of their countrymen, and a senator at that, could find employment for a host of their then deadly enemies, such an adverse public opinion was created

among them that he felt obliged to part with his German venture. In 1872, therefore, a syndicate was formed which purchased the Harburg rubber works and also the rubber factory of J. N. Reithoffer—said to be the oldest in the world—at Wimpassing, near Vienna, Austria, the consolidated business taking the name Vereinigte Gummiwaaren-Fabriken, Harburg-Wien, vormals Menier—J. N. Reithoffer, Actiengesellschaft.

On the consummation of the new arrangement, June 1, 1872, Carl Maret entered, as mechanical director, into the board of management, where he remained until the end of his life, contributing very greatly to the continued growth of the company and the high renown which it enjoys. Both of the factories have been directed from Harburg, the Austrian establishment being entirely subordinate to the German. Herr Maret was held in the highest esteem by all the employés, in whose welfare he always displayed the warmest interest. For many years the management of the business has been shared by Louis Hoff, in charge of the commercial department, and likewise a capable and successful business administrator.

Carl Maret found time also for an active part in public life. For 27 years he was connected with the municipal government

of the city of Harburg and for 18 years was senator of that city. The most beautiful section of Harburg and the Maretstrasse bear witness of his energy in seeking to improve the city. In legislative matters he rendered valuable services to the government. In all things relating to the rubber industry his opinion was always sought in matters of importance and accepted as final. As an organizer he was exceptionally gifted, and his influence in the Centralverein Deutscher Kautschukwaaren-Fabriken (Association of German Rubber Goods Factories) proved most helpful to the industry. In this connection may be mentioned the work accomplished in relation to the customs tariff, and the action taken in recent years in relation to prices. Only a few weeks ago he was honored by the Emperor with the appointment as Imperial Prussian Councillor of Commerce.



THE LATE CARL MARET.

Carl Maret worked unceasingly, in his public and private capacities, until the last days of his ripe old age, leaving a record to be remembered gratefully by the whole German rubber industry.

The funeral of Councillor Maret, on January 26, was a typical illustration of the high esteem and honor in which the deceased was held as well as of the general sorrow caused by his death. The residents of Harburg, the municipal council, and officers and employés of the company were his funeralsort. The interment was in the old cemetery of Harburg, where the Maret family have a burial plot. Harburg buried its best and most honored citizen, and a funeral procession like this was never seen within its walls.

Besides the countless tributes of condolence sent from near and far, many personal friends of the deceased and the firm, the representatives of the principal rubber factories of Germany,

and Herr Dr. Soetbeer in his capacity as business manager of the Centralverein Deutscher Kautschukwaren-Fabriken had arrived to pay the last tribute of respect to the deceased. The decorations, palms, flowers, and wreaths were innumerable.

The funeral cortege was headed by the band of the Harburg Pionier Battalion, followed by the society of the guard reserves, whose senior was Carl Maret (he served his military duties during 1850-51—a one year volunteer—in the guards), a delegation of the employés of the Harburg rubber works, bearing the floral tributes of the board of directors; then the hearse, followed by the near relatives of the deceased; the chiefs of the imperial and municipal governments, the municipal council of Harburg, the fire department of the Harburg rubber and other factories. Then the branches of the Vereinigte Gummiwaren-Fabriken Harburg-Wien, business friends and representatives of the firm, the whole office force, and the entire corps of employés of the Harburg works. About 2000 persons were in line. Herr Konistorialrat General Superintendent Remmers preached the funeral sermon, after which the coffin was lowered to its resting place.

TRIBUTE FROM THE RUBBER ASSOCIATION.

ON January 22, occurred the death, in his seventy-fourth year, of the president of our society, Imperial Councillor of Commerce and Senator Herr CARL MARET, member of the board of directors of the Vereinigte Gummiwaren-Fabriken, Harburg-Wien.

When, in the year 1895, the Verein Deutscher Kautschukwaren-Fabriken was founded, he was elected the first president, and when, in 1898, this society and the Vereinigung Deutscher Gummiwaren-Fabriken were fused into the Centralverein, no doubt existed that in this greater society the presidency belonged to him. As director of the largest German establishment in the rubber industry, aided by years of successful experience in this branch, endowed with exceptional gifts of mind and character, he enjoyed the implicit confidence of his associates. The predominant features in his administration of the affairs of the society were his keen intellect, the broadness of his judgment, the combination of moderation and firmness of his nature, his personal amiability, and his great faculty to reconcile opposing factions and point out to them their allied interests. In high esteem and love, the Centralverein will ever preserve his memory loyally and indelibly.

CENTRALVEREIN DEUTSCHER KAUTSCHUKWAREN-FABRIKEN.

R. HOFFMANN, Vice President. DR. SOETBEER, Secretary.

Herr Maret has been succeeded in his position in the board of directors, and in charge of the mechanical operation, by Franz Stingl, Imperial Austrian Councillor. Herr Stingl has been connected with the company for 33 years, and has been mechanical superintendent of the Wimpassing factory for 25 years.

DEATHS IN THE AMERICAN RUBBER TRADE.

WILDER F. MCCLINTOCK, vice president and assistant manager of the Stoughton Rubber Co., and in charge of their office at No. 232 Summer street, Boston, died on February 5. About a week previously he had a rupture, and submitted to an operation, which was successful, but he took cold immediately afterward which developed into pneumonia with a speedily fatal result. Mr. McClintock was born 58 years ago at Wiscasset, Maine. About twenty years ago he became connected with the Portland (Maine) store of the Hall Rubber Co., of which he was manager when that company, in 1900, was absorbed by the Stoughton Rubber Co., after which he was transferred to the Boston store of the latter. About four months ago Mr. McClintock was elected vice president of the Stoughton company. The funeral was held at No. 31 Lincoln place, Boston, on February 7, and the interment was at Wiscasset on the next day. He leaves a widow and one son, Edward H. McClintock, of Beverly, Massachusetts. Mr. McClintock was a mason and belonged to the Seaside Lodge of Booth Bay Harbor, Maine. Mr.

McClintock had been a member of the New England Rubber Club since March, 1900, and the Club sent a floral offering to the funeral, besides adopting the following resolutions:

WHEREAS: Death has removed from our midst our friend and fellow member, Wilder F. McClintock, we, the members of the New England Rubber Club, are moved by our sense of loss to record the following resolutions:

Resolved: That in the untimely death of our friend, the trade of New England loses an honorable representative, and our Club one of its valued members.

Resolved: That we extend to his family and to the corporation with which he was for many years so closely identified, our deep sympathy.

Resolved: That these resolutions be spread upon the records of the Club, and copies engrossed and be sent to his family and business associates.

Committee on Resolutions: ARTHUR W. STEDMAN, EUGENE H. CLAPP, GEORGE P. WHITMORE.

* * *

MARK R. HAYNE, secretary of the Alden Rubber Co. (Barberton, Ohio), died at his home in Akron on January 27, of a complication of diseases, after an illness of more than six months. He was born in New York state 56 years ago, and had lived in Akron about 25 years, during which he had become one of the prominent men of the city, through his connection with a number of manufacturing establishments. Mr. Hayne was a man of fine intelligence and cultivated tastes, having a love for the antique and being considerable of a collector. He was a member of the Sons of the American Revolution. He is survived by his wife and a daughter, and mother and brother. Funeral services were held in Akron on January 29, and the interment was at Glendale cemetery, in that city.

* * *

JOSEPH BUCKINGHAM CANFIELD, son of H. O. Canfield, the rubber manufacturer at Bridgeport, Connecticut, and superintendent in his father's factory, died accidentally on the night of February 18 at his home as a result of asphyxiation from coal gas from the house furnace. Mr. Canfield was 33 years of age, a college graduate, a member of the Algonquin and Bridgeport Yacht clubs, and, like his father, prominent in Masonic circles.

LECTURES TO RUBBER WORKERS.

THE course of lectures maintained by The Canadian Rubber Co. of Montreal for the benefit of their employés, and mentioned in the last INDIA RUBBER WORLD, is proving a success. Mr. D. Lorne Gibbon, general manager of the company, reports: "I am glad to say that the lectures are being well attended, and I already notice a disposition on the part of the younger element to acquire further knowledge." Regarding the motive for establishing this lecture course, Mr. Gibbon says: "When I assumed the management of this company I was particularly struck with the lack of knowledge of rubber manufacturing by the general public, and more particularly the people who used the manufactured articles. It occurred to me that those who used rubber goods would be interested in knowing more about it, and the only feasible plan I could think of, was to have our staff acquire more knowledge and be in a position to impart it to our customers and prospective customers. The principal reason, however, that prompted me to give a course of lectures to employés was my desire to interest them in their work, as in my experience, no man can make a success of his work unless he is thoroughly interested in it."

UNDER the new Cuban tariff act, the import duty on manufactures of India-rubber and Gutta-percha the duty has been advanced 30 per cent.

NEW ENGLAND RUBBER CLUB'S ANNUAL DINNER.

THE fifth annual banquet of the New England Rubber Club, at the Hotel Somerset, Boston, on the evening of February 17, was attended by 170 members and guests. It proved a thoroughly successful and enjoyable occasion, in every respect, and was voted by many present to be the best of the social features yet planned by the Club, while the members of the various committees in charge were liberally complimented upon the excellence with which their work had been done.

The invitations had announced that a reception would be held in the handsome parlors of the hotel until 5.50 o'clock, when a bugle call would give notice that the tables were in readiness. The members and their guests were received by the Hon. L. Dewart Apsley, president of the Club; his Excellency John L. Bates, governor of Massachusetts; the Hon. William H. Moody, secretary of the navy of the United States; and the Hon. D. A. De Armond, member of Congress from Missouri, the introductions being made by the Club's reception committee, consisting of Messrs. A. W. Stedman, Joseph Davol, C. C. Converse, F. C. Hood, and R. D. Evans.

Precisely on time the bugle sounded, when the diners formed in procession and, headed by President Apsley and Governor Bates, marched to the beautiful gold and white ballroom of the hotel. The room, beyond its own wealth of ornamentation, bore no decoration—and needed none—except that over the head table were displayed four American flags and the personal flag of the secretary of the navy. Previous to the march each guest had been presented with a printed list indicating his position at table. Every one was pleased with the seating plan, which, instead of providing long rows of tables, showed a number of circular tables, each surrounded by fine gilded chairs. At the head table, reaching across the room, President Apsley was seated, with the guests of honor, as shown in an accompanying plan. A copy of the menu is also presented herewith.

At 8 o'clock, President Apsley rapped for order and said:

GENTLEMEN: I desire to remind you that the New England Rubber Club was organized some five years ago by about twenty gentlemen and that it now has 190 members. During these years we have met on many similar occasions and it is with pleasure that I recall those enjoyable times. Our midsummer outings have not been less enjoyable, but I am sure that this occasion, both in pleasure and profit, will be remembered longest, and is quite in harmony with the growth of the Club.

These social gatherings are in themselves good, but the desirability and prosperity of this Club rest on something more important, for in no business that I have known anything about has there been so much suspicion and jealousy as there has been in the rubber trade, and I fear that too much of it still exists.

But I can with pleasure state, advisedly, that much of this feeling has disappeared through the better acquaintance with each other made possible by the work of this organization. We are learning that the "other fellow," though not perfect, is not so dishonest as we had imagined, and as a matter of fact is quite as honest as we are.

This Club has the opportunity to wield a powerful influence in this industry, which amounts annually to over \$120,000,000, and I speak quite within bounds when I say that more than one-half of these goods are manufactured in New England. One branch of this industry alone, rubber boots and shoes, can lay claim to over one-third, or about \$45,000,000 of this business, and it is safe to say that from 80 to 85 per cent. of these goods are manufactured in New England. These are large figures, but each year will see them larger, as the country is growing and the demands are increasing. We are exporting rubber goods to about every country on the face of the globe, and since the formation of this Club this export business has increased five-fold.

This organization can exert a powerful influence with its members if it will point out to them the importance and wisdom of manufacturing and sending to foreign countries only goods of a quality that will give satisfaction. Working on these lines, the entire rubber trade and the

country at large will say, "Prosperity to the New England Rubber Club."

Gentlemen: I have the very great pleasure of presenting to you His Excellency, John L. Bates, governor of this commonwealth, who will welcome our honored guests.

* * *

GOVERNOR BATES was given a great reception when he arose to welcome the distinguished guests of the club. His first duty, he said, was to extend a welcome, on behalf of the commonwealth, to the Club itself, which he noticed was the New England Rubber Club. "For," he said, "there is very little in New England that does not belong to Massachusetts, and I am sure there is nothing in Massachusetts that New England does not claim."

Remarking that ill winds blew the rubber men good, he said that he judged from the appearance of the assembly that this had been a good winter for the rubber business. He felt that he himself had contributed to their prosperity, for everywhere he had attended a dinner during the season he had lost a pair of rubbers.

Continuing he said:

I am pleased to welcome you, so far as you represent the broader Massachusetts, which is called New England, to the old commonwealth, where the business that you represent was first begun in America. The rubber industry has grown wonderfully within the past twelve or fifteen years, and to-night I recognize that you represent an industry whose product, according to the last census, in Massachusetts alone, was worth something like \$30,000,000, and one that employed 11,000 wage earners, representing at least a town of 55,000 inhabitants, that might be said to be dependent upon the various industries known as the rubber industries of this commonwealth. In extending wishes for your prosperity, I know I am extending wishes for the prosperity of the commonwealth itself.

MENU		
	Cotuits, en Coquille	Sauterne
	Tortue Verte, Claire	
Celeri	Radl	Olives
	Alose Planchée, Maitre d'Hotel	
	Pommes Hollandaise	
	Vol-au-Vent, Salpicon	Champagne
	Filet de Bœuf, Moderne	
Pommes Delmonico		Haricot Vert
SORBET A LA RUBBER CLUB		
	Sarcelle Roti	Cigarettes
	Salade de Saison	
Glaces Assorti		Petit Fours Cigars
	Café	Apollinaris

O George H. Hood
O Arthur W. Stedman
O Hon. L. A. Frothingham
O Hon. George H. Lyman
O Congressman D. A. DeArmond
O Governor J. L. Bates
O Hon. L. D. APSLEY, President
O Secretary William H. Moody
O Ex-Governor A. O. Bourn
O George A. Alden
O Hon. J. J. Myers
O C. C. Converse.
O Robert D. Evans

PLAN OF GUESTS' TABLE.

Referring to the presence of a secretary of the navy, Governor Bates remarked that nine times in the history of the country this office had been filled from Massachusetts, and he felt that the present incumbent was a worthy successor to the distinguished sons of the state who had preceded him. Introducing Congressman De Armond, the Governor said:

It is also my pleasant privilege to welcome one who comes this evening as a good Democrat from Bates county, Missouri. [Laughter.] I am hoping that before he gets through this evening he will explain how it is that a Bates county down South sends a Democrat, when no such county would be called a Bates county in Massachusetts. [Applause.] We are glad to welcome him because of what we know of him, a man of convictions, a man of force, a man who is a good and a fair fighter, and a man who represents a great commonwealth. [Applause.]

* * *

PRESIDENT APSLEY next introduced Secretary Moody as follows:

GENTLEMEN: In my brief introductory remarks I referred to the growing importance of the export trade in our branch of industry, and I now call attention to the fact that in order to successfully compete with other countries in the markets of the world, it is essential that the flag of our nation should be respected by those with whom we would do business.

Commerce can only flourish where peaceful conditions prevail and nothing contributes more to peaceful foreign relations than the protection of our rights in every quarter of the globe. This thought is emphasized at this particular time by the conditions in the Far East, where the commercial supremacy of either Russia or Japan, in that territory, so largely depends on the strength of their respective navies.

It is, therefore, quite appropriate that we should be possessed of information regarding the naval equipment of our nation, and we are especially fortunate and feel greatly honored by having with us a citizen of this commonwealth whom all our people delight to honor, one who by his conspicuous services in congress, as well as by the high position he now occupies, has done much to advance the interest of the nation.

I now have the pleasure of introducing the Secretary of the Navy, the Hon. William H. Moody.

* * *

SECRETARY MOODY said that he always took delight in responding to the toast "The Navy." Possibly some present had seen him referred to as "an impressive jingo" in the newspa-

pers, in consequence of his response to the same toast in New York the other night. "I fear that your President," he continued, "from what he has said is in the same class. He stated that while I believed that I was a lover of peace—I know that I am a lover of peace, gentlemen—that while I believed I was a lover of peace, it was only because I believed that peace was best preserved by armament. If that is what he means by being a 'jingo,' I plead guilty to the indictment. If the wish to use a fair proportion of the enormous resources of this country in the defense of the nation's rights upon the sea constitutes 'jingoism,' then again I plead guilty to the indictment. And I have to say that I am in good company. [Applause.]"

He would not call to witness all the distinguished men in American history who had believed with him, but would only refer to George Washington, who, in his second inaugural address said: "The United States ought not to indulge the persuasion that contrary to the order of human events they will forever keep at a distance those painful appeals to arms with which the history of every other nation abounds. If we desire to avoid insult, we must be able to repel it. If we desire to secure peace, one of the most powerful instruments of our rising prosperity, it must be known that we are at all times ready for war." He was quite willing to be called a George Washington jingo. [Applause.]

He referred to the naval features of the war now in progress beyond the Pacific, but it was unnecessary to go to the history of other lands to demonstrate the importance of sea power. No nation had had lessons more sudden and more frequent of the great importance of that power than our own, and he recounted several instances, with the importance of their bearing upon the history of the country. Secretary Moody concluded:

The first duty in time of peace is to prepare the navy so that it shall be instantly ready to perform the function for which it is ultimately designed. We have a big responsibility in the Caribbean sea. It is there the Monroe doctrine has its greatest application, and the Monroe doctrine is just as strong as the navy and no stronger. If we are strong enough to enforce the Monroe doctrine we never shall have to do it. We have a big responsibility to Cuba. We have a big responsibility to the Philippines. I have no doubt that there was much of the lust of land

LIST OF THE CLUB MEMBERS PRESENT AND THEIR GUESTS.

[The members are named first, followed by names of guests "indented."]

George A. Alden	C. C. Lockwood	E. H. Cutler	L. H. Bartlett	John E. Page	A. P. Spear
H. H. Wadleigh	C. H. Arnold	Isaac Crocker	E. D. Hewins	John Abbott	H. B. Sprague
Hon. J. J. Myers,	C. J. Bailey	Joseph Davol	Charles Kellogg	R. E. Paine	George H. Burgess
ex-Speaker Massachusetts	Robert B. Baird	Eben F. Dewing	F. C. Hood	William H. Palmer	A. W. Stedman
legislature	W. T. Baird	R. L. Dorr	Dr. Carl O. Weber	W. H. Johnson	G. Herbert Windeler
E. I. Aldrich	W. E. Barker	J. Frank Dunbar	Arthur Little	John S. Patterson	Hon. L. A. Frothingham
Will L. Stewart	A. L. Robinson	Alexander S. Brown	George H. Hood	Eli Bliss	Speaker Massachusetts
F. H. Appleton	Charles W. Barnes	C. F. Edgarton	John Hopewell	Dr. F. A. Davis	legislature
F. H. Appleton, Jr.	O. A. Barnard	F. C. Hatch	H. Stuart Hotchkiss	W. J. Kent	John W. Wyde
Lewis D. Apsley	Charles H. Sawyer	George P. Eustis	O. R. Howe	D. L. McGibbon	J. H. Stedman
Hon. J. B. Holden	Lawrence T. Sawyer	William R. Dupee	Ernest Jacoby	George Barret	Walter I. Swasey
Hon. J. J. McCarthy,	F. C. Johnson	R. D. Evans	Frederick H. Jones	John Haseltine	Leland T. Powers
collector Port of Boston	A. W. Pope	W. M. Farwell	Arthur G. Walton	A. M. Paul	Dr. Edward Roffe
Gen. W. H. Brigham,	A. F. Bartholomew	F. H. Albee	Charles J. Rich	E. E. Fay	Dr. G. W. Whiting
of Governor Bates's staff	A. O. Bourn	George H. Forsyth	William Keyes	R. J. Owens	Ellis Hollingsworth
A. D. Gleason	H. H. Beddell	Thomas Forsyth	P. D. Langley	M. S. Morley	Benjamin Taft
Thomas F. Taft	S. W. Bourn	John H. Flint	William B. Loughton	E. B. Pearson	J. Jackson Todd
Rev. John Baltzly	I. F. Burnham	John N. Cole	J. Henry Bean	W. L. Pitcher	F. W. Veazie
Charles H. Crump	Frank T. Carlton	W. H. Gleason	Frank L. Locke	Jos. W. Green, Jr.	Daniel Clifford
Joseph S. Bradley	R. L. Chipman	D. N. Graves	R. A. Loewenthal	W. B. Powell	Frank Thayer
Milton T. Bailey	A. W. Clapp	Horace Albers	H. C. Mason	Edward R. Rice	E. E. Wadbrook
Charles F. Hamilton	W. C. Coleman	William N. Homer	George H. Mayo	Thomas G. Richards	H. F. Wanning
George A. Reardon	A. L. Comstock	N. Lincoln Greene	W. H. Mayo	P. L. Rider	John F. Wheeler
Col. E. H. Woods,	F. K. Guth	G. Edward Habrick	C. H. McDermott	T. J. Skinner	Frank N. White
Boston Herald	C. C. Converse	J. E. Martin	John J. McGill	Ellsworth H. Hicks	Howard B. White
D. J. Lord	I. W. Chick	J. H. Hebard	Otto Meyer	J. H. D. Smith	George P. Whitmore
Henry Tower	Newton Crane	E. A. Hebard	Charles A. Morse, Jr.		E. S. Williams
R. S. Osterhout			Fred L. Moses		
R. C. Hall					

which is characteristic of our race, much of the desire to be a great world power in the taking of the Philippines, but I believe the underlying motive in taking them was the same as that which induced us to give up Cuba. We must defend those islands.

We have 26,000 miles of seacoast to defend—more than any nation except Great Britain. Leave it undefended and it is a pathway to our enemies. Defended it is your greatest safeguard. We have no entangling alliance with any other country and we shall enter into none. We shall defend ourselves. Let us then be backed with God and with the seas, which he hath given us for defense, impregnable, and with their help alone defend ourselves. In them and in ourselves our safety lies. [Applause.]

* * *

PRESIDENT APSLEY next introduced Congressman DeArmond, saying:

GENTLEMEN: It may fairly be presumed that the members of this Club have their minds largely centered upon questions which have special connection with the rubber business, but we do not forget that we are not only manufacturers and merchants, but citizens of the United States as well, and are, therefore, deeply interested in all that concerns the conducting of the business of our government, whether state or national, and we certainly desire that the power of the professional politician or the supposed interest of political parties may not interfere with effective work on the part of all those who are in any way connected with it.

It is a great pleasure to me, personally, and the Club is to be heartily congratulated on having here to night one of the very foremost men in the national house of representatives, a gentleman of the highest possible character, and eminently qualified to handle the important subject of "Civil Service Reform."

I now have the honor of presenting to you the Hon. David A. DeArmond, of Missouri.

* * *

CONGRESSMAN DEARMOND, who was enthusiastically received, after paying a high tribute to the American navy, said:

I have been convinced for some time that there is a great mistake committed by making the tenure in the civil service practically for life. I believe it is contrary to the genius of our institutions. I believe under our system that the people ought occasionally, and perhaps quite frequently, to have the opportunity to determine whether a man shall continue in the public service or not. I believe the effect of putting a number of men into the public service under a system which leaves many of them there for life is bad. The first thing, under the present system, is to get into the public service, with a reasonable assurance that you may continue in it; the next thing is to lessen the amount of services you perform and increase the amount of compensation you receive. That is human nature. Don't exhaust the job too soon. Don't do too much. [Laughter.]

I believe it would be better if persons were appointed to the civil service for a definite period of time. Then there would be constantly present in the mind of the employé the condition that in order to get an extension of time by reappointment, it would be necessary for him to prove himself efficient and reliable.

Let me suggest, if there is anything in this matter of turns, that it is about time we had our turn in the administration of national affairs. [Laughter.] It is a great relief in an executive officer not to have control of patronage absolutely, merely to peddle out to party workers—not that I decry the party worker—but for Tom, Dick, and Harry to press upon a man who has many public duties, to perform the important one of putting them into public employment, is really to wear out men who might devote their time to more useful pursuits. I have no doubt my friend, the secretary of the navy, appreciates that, great partisan as he is, and a man can be a good partisan even though he is on the wrong side, as he is. [Laughter.]

The great desideratum in public affairs is absolute honesty. I believe one of the most profitable things this country has done in recent years was parting with Cuba, when this country had the power to hold it. It was not only honorable and creditable in us, but beneficial to us for generations to come.

At the conclusion of the speech making, "Home, Sweet Home" was played by the orchestra, while the members departed for their homes, all voting the banquet a marked success. In this connection should be named the members of the various committees having charge of the arrangements:

Dinner Committee.—Frederick H. Jones, William Keyes, George P. Whitmore, William J. Kelly, O. A. Barnard.

Entertainment Committee.—Arthur W. Stedman, William F. Mayo, E. S. Williams, Henry C. Pearson, Theodore S. Bassett.

Reception Committee.—Arthur W. Stedman, Joseph Davol, Costello C. Converse, Frederick C. Hood, Robert D. Evans.

One of the pleasant features of the evening was the presence of a number of ladies in the boxes in the balcony, who watched the proceedings with interest to the end. It was the first occasion when ladies had been present at one of the Club's entertainments. One party was made up of the wives of President L. D. Apsley and Colonel E. H. Woods, of the Boston *Herald*, and a number of their friends.

MANUFACTURE OF WEATHER STRIPS.

ONE of the many minor lines of manufacture in which rubber forms an important part is that of ordinary weather strips for doors and sashes. These useful and sanitary appliances generally utilize only low grade reclaimed stock, usually in the form of rubber coated sheeting and light cloth insertion packing. A common method of combining the rubber with either wood or metal strips is in the form of an open tubular fold of sheeting, with the edges held securely in the body of the strip. This form is known as the "double edge" or "cushion" style, as distinguished from the single edge of flat rubber packing formerly more commonly employed.

In making the newer or double edge strip the rubber sheeting is first cut very accurately parallel by rapidly drawing the fabric between sharp knives set at proper intervals in a bench. The edges are next glued by a simple device and are then ready for insertion in the prepared molding, which contains two fine parallel lengthwise cuts to receive the glued edges of the rubber strip. The latter is quickly inserted into the cuts by the aid of a simple grooved hand block or die, which folds and fits the rubber into its place. These wood weather strips are made in numerous neat designs, sizes, and forms, adapted to every requirement of location.

More attractive and durable, however, are the extremely neat forms of weather strip attained by substituting thin sheet metal—brass, zinc, or copper—for the clumsy wood moldings. This newer form combines the merits of flexibility, durability, and compactness. It is very inconspicuous when applied and is the only kind adapted to many locations, as around sashes of railway coaches for excluding dust and preventing vibration. These rubber strips vary in width from $\frac{3}{8}$ to $\frac{7}{8}$ of an inch, and are frequently made continuous in 100 feet lengths.

The manufacture of these strips is accomplished by swift automatic machines with special dies and folding devices to form the flat metal ribbon into neatly curved and creased backs, with edges closely folded in to avoid cutting the rubber surfaces, yet holding the rubber strip in a compact grip. After forming the strip the machine automatically punches through the metal back small holes at regular intervals for allowing the passage of the brads used in applying the strip. These still further aid to hold the rubber in place.

MESSRS. EARLE BROTHERS, India-rubber brokers, No. 66 Broad street, New York, have favored THE INDIA RUBBER WORLD with a copy of their annual Rubber Statistics for 1903—a publication which has appeared regularly so many years.

RECENT RUBBER PATENTS.

UNITED STATES OF AMERICA.

ISSUED JANUARY 5, 1904.

- N**O. 748,742. Hose coupling. Jefferson Jefery, Newcastle, Pa.
- 748,775. Wheel [with special rim for retaining rubber tire]. J. B. McMullen, Howard county, Md.
- 748,798. Art of manufacturing hose. H. H. Shepard and F. H. Fish, Bristol, R. I.
- 748,838. Cover for elastic tires [the new feature in the Palmer tire]. Christian H. Gray, Silvertown, and T. Sloper, Devizes, England.
- 748,937. Holder for the stoppers of water bottles. A. C. Eggers, New York city, assignor to Goodyear's India Rubber Glove Manufacturing Co.
- 748,953. Tool for seating rubber tires in rim channels. W. S. Jacobs, Malden, Mass.
- 748,976. Mold. J. F. Spencer, Philadelphia.
- 749,053. Golf ball. Charles J. Grist, Apsley, Banstead, England.

Trade Mark.

- 41,800. Certain named rubber goods. The Flexible Rubber Goods Co., Winstead, Conn. *Essential feature.*—The word "Vita." Used since October 2, 1901.

ISSUED JANUARY 12, 1904.

- 749,180. Surgical pan. A. Galloway, Xenia, Ohio.
- 749,253. Hose coupling. J. Ballenberger and C. Scheidemantel, Pittsburgh, Pa.
- 749,299. Elastic tread horseshoe. A. W. Jones, Pacific Grove, Cal., assignor to J. S. Tait, Washington, D. C.
- 749,483. Hose coupling [for steam hose for trains]. E. E. Gold, New York city.
- 749,496. Hose coupling. Henry S. Patterson, Ravenna, Ohio, and Herbert S. Patterson, Scenery Hill, Pa.
- 749,633. Electrical hose signaling apparatus. W. G. Seeley, Brookline, Mass.

Trade Marks.

- 41,847. India-rubber pencil erasers. L. & C. Hardtmuth, Vienna and Budweis, Austria-Hungary, and London, England. *Essential feature.*—The letter "H," two stars, and a circle surrounding the letter "H" and the stars. Used since January 1, 1879.
- 41,852. Elastic webbing fabric and goring. Boston Gore and Web Manufacturing Co., Boston and Chelsea, Mass. *Essential feature.*—An oval-shaped band surrounding the letter "B". Used since April, 1894.

ISSUED JANUARY 19, 1904.

- 749,774. Paint sprayer. H. R. Cooper, Sr., Butler, Pa.
- 749,830. Vehicle tire. J. Q. Work, Lamar, Mo.
- 749,840. Rim for vehicle wheels [with flange for retaining pneumatic tire]. S. Butler, Westbury-upon-Trym, England.
- 749,845. Cushion tire. J. Coomber, assignor of three-fourths to J. Caldwell, H. E. Wood, and A. C. Gifford, all of New York city.
- 749,978. Composite block for soft treads and method of making same. C. W. Zaring, New York city.
- 750,000. Vehicle tire. E. F. McArdle, New York city.
- 750,023. Tire. G. M. Depew, Canandaigua, N. Y.
- 750,103. Bed pan. A. C. Eggers, New York city, assignor to Goodyear's India Rubber Glove Manufacturing Co.
- 750,104. Throat bag. *Same.*

Trade Mark.

- 41,905. Rubber sponges. Russian-American India Rubber Co., St. Petersburg. *Essential feature.*—A triangle containing within it the figures "1860" and the letters "T P A P M." Used since January, 1888.

ISSUED JANUARY 26, 1904.

- 750,249. Protective band for pneumatic tire. H. Brooks, Stirchley, England.
- 750,271. Fountain pen. A. Eberstein, assignor to C. Brandt and C. E. Brandt, all of Boston.
- 750,276. Vaginal syringe. F. J. Gruss, San Francisco.
- 750,297. Nasal douche. F. W. Moffitt, Chicago.
- 750,340. Hose pipe fastening. F. Bissling, Kreuzlingen, Switzerland.
- 750,857. Household implement [brush head]. R. Gibbons (J. K. Beach, administrator), New York city.
- 750,379. Pneumatic tired wheel. T. Lindenberg, Columbus, Ohio.
- 750,430. Fountain pen. F. C. Brown, New York city.

- 750,521. Atomizer. F. V. Braymer, assignor of one third to C. W. Braymer, both of Blooming Valley, Pa.
- 750,546. Fountain pen. F. M. Kegrize, Philadelphia.
- 750,571. Pneumatic seat. C. L. Berger, Richmond, Ind., assignor of one half to R. Morrow, Minneapolis, Minn.
- 750,583. Fountain pen. F. C. Brown, New Brighton, N. Y.
- 750,647. Vehicle tire protector. F. B. Yayden, Belleville, N. J.
- 750,780. Elastic band or strap. J. D. O'Brien, Boston.

Design.

- 36,761. Tiling. A. A. Spadone, New York city.

[NOTES.—Printed copies of specifications of United States patents may be ordered from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENTS APPLIED FOR—1903.

[* Denotes Applications from the United States.]

- 26,598. G. E. Osmond and S. Feast, London. Repair bands for pneumatic tires. Dec. 4.
- 26,599. G. E. Osmond, London. Pneumatic tire. Dec. 4.
- 26,608. F. W. Barratt, Wimborne. Inflatable tire. Dec. 5.
- 26,658. H. Williamson, Liverpool. Fire hose apparatus. Dec. 5.
- 26,717. H. R. Weaver, London. Pneumatic vehicle tire. Dec. 7.
- 26,789. J. Balog, London. Fountain pen. Dec. 7.
- 26,805. F. W. Mitchell, Seven Kings, Essex. Rubber bath glove. Dec. 8.
- 26,880. G. H. Hickson, London. Heel protector for boots. Dec. 8.
- 26,955. H. L. Todd, London. Fountain pen. Dec. 9.
- 26,985. G. Sutton, London. Golf ball. Dec. 9.
- 27,009. J. T. Sutcliffe, Burnley. Adjustable heel for boots. Dec. 10.
- 27,016. F. H. Barker, Manchester. Rubber heels for boots. Dec. 10.
- 27,078. B. Couverchel and J. Billett, London. Anti-skidding cover for pneumatic tire. Dec. 10.
- 27,065. F. Woodgates and T. W. Jourdan, London. Material for repairing pneumatic tires. Dec. 10.
- 27,091. J. S. Smith, London. Pneumatic tire. Dec. 10.
- 27,092. G. Radmore, London. Rubber tire for vehicles. Dec. 10.
- 27,187. J. Y. Johnson, London. Improvement in wheels for vehicles having pneumatic tires. (Soc. An. des Forges de Douai, France.) Dec. 11.
- 27,240. G. Brown, Glasgow. Revolving heel pad. Dec. 12.
- 27,243. W. H. Castlehouse, E. P. Castlehouse, and C. D. Burton, Scarborough. Tire for motor cars. Dec. 12.
- 27,247. F. H. Barker, Manchester. Rubber heel for boots. Dec. 12.
- 27,260. F. Tolkien, London. Tire for motor and cycles. Dec. 12.
- 27,320. H. S. Eyre, St. Leonards-on-Sea. Device to prevent side slip in pneumatic tires. Dec. 24.
- 27,391. E. Michelin, London. Lever for manipulating the covers of pneumatic tires. Dec. 14.
- 27,499. W. H. Simons, London. Removable heel for boots. Dec. 15.
- 27,512. H. Hessenmüller, London. Pneumatic hammer, more especially for working curved surfaces on a circular plane, such as resilient rings for tires. Dec. 15.
- 27,520. E. C. Pope-Sadler, Kew. Tread for pneumatic tires, to prevent side slip or puncture. Dec. 15.
- 27,534. C. H. Wilkinson, Huddersfield. Device to prevent slipping of wheels. Dec. 16.
- 27,629. E. E. Bernhard, London. Non-slipping band for pneumatic tires. Dec. 16.
- 27,716. A. T. Collier, London. Elastic tire for vehicles. Dec. 17.
- 27,723. P. J. Trooquette, London. Resilient tire. Dec. 17.
- 27,747. R. Wallwork and C. H. Wallwork, Manchester. Means of attaching covers to pneumatic tires. Dec. 18.
- 27,856. A. J. Howard, Leicester. Non-slipping device for pneumatic tires. Dec. 19.
- 27,871. L. Bitt, Sheffield. Tire for road vehicles. Dec. 19.
- 27,955. David Moseley and B. Blundstone, Manchester. Vehicle tire. Dec. 21.
- 28,120. S. Harrison and A. Harrison, Burnley. Revolving heel pad. Dec. 22.
- 28,152. C. T. Kingzett, London. Manufacture of golf balls. Dec. 22.
- 28,161. A. H. Minns, London. Heel pad. Dec. 22.
- 28,190. Martin Lindner, London. Apparatus for vulcanizing under pressure. Dec. 22.

- 28,207. F. Reddaway, Manchester. Securing pneumatic tires to rims. Dec. 23.
- 28,233. E. Greg and T. H. Hirst, London. Manufacture of motor tires. Dec. 23.
- 28,204. H. L. Alderson, Stafford. Non-slip boot protector. Dec. 24.
- 28,323. J. E. Mortimer, Portsmouth. Valve for pneumatic cushions. Dec. 24.
- *28,353. Augustus O. Bourn, 52, Chancery Lane, London. Process of vulcanizing rubber. Dec. 24.
- 28,371. L. Azuly, London. Pneumatic tire. Dec. 24.
- 28,437. T. S. Fordes, London. Resilient tire for motors. Dec. 28.
- 28,500. E. E. Hopkinson and J. E. Hopkinson & Co., Limited, London. Elastic tire for vehicles. Dec. 28.
- *28,545. W. G. Heys, Manchester. Machine for covering wire with insulating material. (W. E. Ammon, United States.) Dec. 29.
- 28,664. J. Dexter, London. Leakage cover for fire hose. Dec. 30.
- 28,675. R. J. Peach, Birmingham. Puncture finder for inflated tires. Dec. 30.
- 28,691. The Dunlop Rubber Co., Limited, and J. W. O. Walker, London. Tire for vehicles. Dec. 30.
- 28,705. A. C. Williams, London. Non-slipping cushion heel pad. Dec. 31.
- 28,720. J. Harrington, Brighton. Protective tire tread for outer cover for tires. Dec. 31.
- 28,809. E. Sedgwick, Canterbury. Revolving heel. Dec. 31.
- 28,817. D. B. Jacob, London. Non slipping device for pneumatic tires. Dec. 31.

APPLICATIONS—1904.

28. Oswald G. Moseley, Manchester. Pneumatic tire and fabric therefor. Jan. 1.
49. Albert C. Hills, Coventry. Elastic tire. Jan. 1.
58. D. Howard, London. Anti-side slip device for pneumatic tired wheel. Jan. 1.
62. W. C. Hawtin, London. Heel pad. Jan. 1.
- *75. W. P. Thompson, Liverpool. Elastic tread horseshoe. (J. S. Tait, United States.) Jan. 1.
90. A. J. Boulton, London. Puncture closer for tires. (Baron R. Peronne de Sennevoy, France.) Jan. 1.
148. R. S. Wood, Manchester. Pneumatic tire. Jan. 4.
173. R. F. Davis, London. "Davis" patent heel. Jan. 4.
213. J. U. Burt, London. Means of securing resilient tires to wheels. Jan. 4.
255. S. E. Burrow, Leeds. Waterproof shield for cyclists. Jan. 5.
271. S. Johnson, London. Wheel rim with rubber tire. Jan. 5.
277. H. A. Rogers, London. Waterproof garment. Jan. 5.
288. J. Marks, London. Hose coupling. Jan. 5.
298. C. Mercades, London. Improvement in vehicles having pneumatic tires. Jan. 5.
356. R. A. Kent, London. Tire composed of rubber core and a rubber covering. Jan. 6.
369. L. J. Cole, London. Reservoir pen. Jan. 6.
374. Christian H. Gray, London. Improved tennis ball. Jan. 6.
377. T. M. Thom, H. R. Gregory, and G. Merrylees, London. Treatment of waste vulcanized rubber. Jan. 6.
419. H. Asprey, Burley, Yorkshire. Duplicate non-puncturable motor cycle tire. Jan. 7.
428. E. T. Cheer and W. Tess, Upton Park, Essex. Rim for motor car. Jan. 7.
430. J. Hill, Hawick, Scotland. Pneumatic tire cover. Jan. 7.
469. E. Cleary, London. Tire for vehicle. Jan. 7.
525. Céleste Joly and Reginald Boucher, London. Elastic wheel. Jan. 8.
537. The Dunlop Rubber Co., Limited, and J. V. Worthington, London. Inflatable playing ball. Jan. 8.
596. E. Niederhäuser, Cologne, Germany. Jacket of lamellæ for pneumatic tires. Jan. 9.
647. W. Foster and B. S. Foster, Leeds. Revolving heel pad. Jan. 11.
654. A. W. Mackenzie and J. Ross, London. Wheel rim and tire. Jan. 11.
749. W. E. Harker, Tynemouth, Northumberland. Prevention of punctures in tires. Jan. 12.
- *758. W. G. Heys, Manchester. Insulating electrical conductors. (W. E. Ammon, United States.) Jan. 12.
800. L. Johnstone, London. Pneumatic or cushion or other rubber tire for vehicles. Jan. 12.

PATENTS GRANTED.

[ABSTRACTED IN THE OFFICIAL JOURNAL, DECEMBER 23, 1903.]

- *18,734 (1902). Elastic tire for vehicles. W. I. Gregory, Springfield, Massachusetts.
- *18,737 (1902). Vehicle wheel rim [adapted to pneumatic or other elastic tires]. J. Baker, Meacham, Illinois.
- *18,738 (1902). Elastic stocking. W. F. Ware and W. R. Cartledge, Philadelphia.
- *18,745 (1902). Vehicle tire [of solid rubber; attached to the channel shaped rim by endless wires embedded in the tire during manufacture, so as to pass through projecting eyelets]. H. C. Haines and W. E. Huber, Chicago.
- 18,959 (1902). Syringe [for horticultural use]. W. Ring, Regensburg, and F. H. Mayr, Friedberg, Bavaria.
- 19,043 (1902). Powder blower [for administering medicines]. J. G. Glass, Edinburgh.
- 19,062 (1902). Rubber boot heel. H. Holt, Koath, Cardiff.
- 19,127 (1902). Golf ball [with Gutta-percha core covered with alternate layers of rubber and gutta, and an outer casing of Gutta-percha]. T. Cockburn, Newcastle-on-Tyne.
- 19,188 (1902). Inflatable life belt. J. Ewing, Richmond, Quebec.
- 19,189 (1902). Inflatable life belt. J. Ewing, Richmond, Quebec.
- 19,242 (1902). Golf club [with leather striking plate, cushioned by an elastic pad]. E. J. Byrne, Erdington, Warwickshire.

[ABSTRACTED IN THE OFFICIAL JOURNAL, DECEMBER 31, 1903.]

- 19,324 (1902). Bottle stopper. M. M. Dessau, Merton, Surrey.
- 19,366 (1902). Electric cable. W. E. Hitch, Birmingham.
- 19,424 (1902). Surgical truss. F. Kiesel, Vienna.
- *19,506 (1902). Billiard cushion. G. C. Dymond, Liverpool. (B. A. Stevens, Toledo, Ohio.)
- 19,675 (1902). Golf club [with pneumatic cushioned striking face]. W. Taylor, Banark.
- 19,704 (1902). Vehicle wheel and rubber tire. A. Whiteway, Sale, Cheshire, and Charles Macintosh & Co., Limited.
- 19,754 (1902). Pneumatic and solid rubber tire combined. A. Tobler and H. Samuel, London.
- 19,755 (1902). Circular heel pad. G. H. Hickson, Stockton-on-Tees.
- 19,794 (1902). Swimming apparatus [of waterproof material for attachment to the foot]. H. Höhmann, Barmen, Germany.
- 20,081 (1902). Devulcanization of India-rubber. A. E. J. V. G. Theilgaard, Copenhagen, Denmark.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JANUARY 13, 1904.]

- 20,087 (1902). Pneumatic tire [relates to means for attaching the edges of the cover to wheel rims by extensible coiled wire rings]. F. Reddaway and J. Muskett, Manchester.
- 20,105 (1902). Heel protector. A. Dickinson, Halifax.
- *20,129 (1902). Umbilical bandage. C. J. Higgins, Wanatah, Indiana.
- 20,208 (1902). Packing for stuffing-boxes and gage-glasses. J. Dewrance, Southwark.
- *20,405 (1902). Pneumatic tire [detachable, with means for securing same; the tire made by the Fisk Rubber Co.]. J. C. Cole, Chicopee Falls, Massachusetts.
- 20,449 (1902). Button [for clothing]. W. H. Forsyth, Bristol.
- 20,471 (1902). Syringe. R. J. Reuter and A. B. V. Taffs, London.
- 20,530 (1902). Exercising apparatus. A. E. Terry, Redditch.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JANUARY 20, 1904.]

- 20,667 (1902). Heel and sole piece for boots. T. Burrell, North Melbourne, and E. C. Perdriau, Melbourne, Australia.
- 20,737 (1902). Boot protector. A. W. Mantle and J. P. Frisby, Desborough, Northamptonshire.
- *20,744 (1902). Reservoir pen. R. B. Dickie, Kenosha, Wisconsin.
- *20,749 (1902). Pneumatic tire [with series of air tubes communicating with one inflating valve]. C. E. Thomas, Tucson, Arizona.
- 20,790 (1902). Revolving heel pad. J. T. Crossgrove, Stockton-on-Tees.
- 20,808 (1902). Revolving heel pad. A. Briggs, Market Harborough, Leicestershire.
- 20,812 (1902). Sanitary utensil cover. J. W. Fearnley and T. Wood, Newtown in Leeds.
- 20,827 (1902). Pneumatic tire. G. H. Hastings, Oporto, Portugal.
- 20,896 (1902). Punching machine for rubber and other belting. W. H. Baxter, Leeds.
- 20,910 (1902). India-rubber substitute [gum obtained from a Mexican plant that the patentee calls *Syrantheroeas Mexicanas*, which name

he seems also to have invented]. William Prampolini, San Louis Potosi, Mexico.

- 20,962 (1902). Pneumatic tire. W. Smith, London.
 21,100 (1902). Pneumatic tire [protected from puncture by an aluminum tread strip]. E. A. Hilder, Kentish Town, London.
 21,129 (1902). Golf ball [with core of wound rubber thread]. P. M. Matthew and C. R. Crombie, Victoria India Rubber Mills, Edinburgh.
 *21,200 (1902). Exercising apparatus. G. S. Maxwell, Madison, and G. White, Jersey City, New Jersey.

GERMAN EMPIRE.

PATENTS GRANTED.

- 149,149 (Class 306). Vulcanizing oven. W. Reinhard, Berlin. March 22.
 DESIGN PATENTS GRANTED [GEBRAUCHSMUSTER].
 213,805 (Class 36). Textile fabrics underlaid with mass of natural rubber to serve as waterproofing for cloths, being attached with a ho iron instead of sewing. C. Thill, Cologne. Dec. 23.
 213,696 (Cl. 286). Rubber cover for work table in leather working machine, with arrangement for padding in the middle. Vaughn Machine Co., G. m b. H., Frankfurt a/M. Dec. 23.
 213,567 (Cl. 451). Horseshoe of hard rubber with rubber cushions, hollow on under side to prevent slipping. F. Lindner, Breslau. Dec. 23.
 213,959 (Cl. 632). Steel protective tire covered with rubber. Frieda Winkler, Ofenerfeld, bei Oldenberg. Dec. 30.
 214,413 (Cl. 477). Linen lined rubber hose, with spiral metallic band, for conveying gas to railroad cars. H. Schwieder, Dresden. Jan. 13.
 214,044 (Cl. 127). Automatic siphon of soft rubber with return valve. A. Kahlert, Hamburg. Nov. 3.
 214,135 (Cl. 304). Warm compresses, consisting of hollow rubber cushions of size and shape of the eye cavity, provided with means of filling and fastening, single, and triangular in shape. Hill u. Müller, Mannheim. Nov. 26.
 214,136 (Cl. 304). Warm compresses for diseased eyes, consisting of hollow rubber cushions with means of filling and fastening, shaped like spectacles to cover both eyes. Same. Nov. 26.
 214,062 (Cl. 309). Nipple for nursing bottle, consisting of solid mouthpiece pierced by numerous canals. Dr. W. Krohn, Dresden. Nov. 24.

APPLICATIONS.

- 8,853 (Class 34). Air cushion adapted to be heated. E. Titters, Kaiserslauten. April 15.
 8,375 (Cl. 634). Process for making endless self sealing air tubes for tires. C. Stoeckicht, Frankfurt a/M. Aug. 22.
 14,713 (Cl. 394). Appliance for cold vulcanizing rubber goods. T. Ponga, Köln-Ehrenfeld. Dec. 23.
 35,546 (Cl. 434). Capsule for rubber rings. R. Bürk, Schweinigen. Jan. 6, 1904.

THE FRENCH REPUBLIC.

PATENTS ISSUED (WITH DATE OF APPLICATION).

- 335,087 (Sept. 8, 1903). Barnault and Binet—Protection for pneumatic tires.
 335,104 (Sept. 9, 1903). S. Butler—Improvements in automobile wheel tire rims.
 335,159 (Sept. 11, 1903). R. Bobet—Improvements in the manufacture of pneumatic tire covers.
 335,173 (Sept. 12, 1903). Société Geoffroy et Delore—Process of packing and for preserving air tubes of pneumatic tires.
 335,185 (Sept. 14, 1903). Cooper and Smith—Pneumatic tire, with special felly.
 335,211 (Aug. 14, 1903). Franchomme—Unpuncturable pneumatic.
 335,388 (Sept. 16, 1903). C. J. Pigeon—Tires for vehicle wheels.
 335,469 (Sept. 22, 1903). Thropp and de Laski—Tires with circular woven fabric.
 335,584 (Sept. 26, 1903). E. H. Fayolle—Process for the manufacture of a substitute for Caoutchouc.
 335,940 (Sept. 18, 1903). Perrot—Pneumatic tires having several air tubes.
 335,896 (Oct. 14, 1903). Voland and Garambois—Application of a new fabric in the manufacture of air tubes and for pneumatic tire covers.
 335,826 (Oct. 8, 1903). Delorme—Pneumatic tire cover.
 336,071 (Oct. 7, 1903). A. Voland—New elastic tire for bicycles and automobiles.

[NOTE.—Printed copies of specifications of French patents may be ordered from R. Bobet, Ingenieur-Consult, 16, avenue de Villiers, Paris, at 50 cents cash, post paid.]

AN OLD RUBBER MAN RETIRES.

ONE of the oldest rubber workers in the country has lately retired from the employment of the Goodyear's India Rubber Glove Manufacturing Co., at Naugatuck—Mr. Cyrenius N. Squires. Mr. Squires was born in Redding, Connecticut, January 25, 1832, and in 1850 secured employment in the rubber factory of John Greacen, Jr., at Sandy Hook. In 1852, he removed to Naugatuck and went to work as a cutter in the plant of the Union India Rubber Co., which later was occupied by the Goodyear's India Rubber Glove Manufacturing Co. In 1861 he enlisted in the army, but at the end of two years returned to the factory at Naugatuck, where he remained as foreman of the clothing department until early in the present year.

Mr. Squires, among other details supplied to THE INDIA RUBBER WORLD, says: "I built and used the first dry steam vulcanizer for curing rubber goods. Our old vulcanizer was built of brick, about 20 feet square, with coils of stove pipe on the floor and ceiling, through which hot air, direct from the furnace, was forced. The coats were cemented and hung inside the room to be cured, and often taken out worthless on account of being over cured. I thought that the work could be done better with steam pipes, and after much opposition was finally allowed to experiment. The new plan proved a success from the first."

Mr. Squires states that about 28 years ago P. T. Barnum exhibited a white elephant in this country. His competitor in the circus business, not wishing to be outdone, asked the Glove company to make him an elephant of white rubber. Mr. Squires was their pattern maker, and the work was put into his hands. The showman was so pleased with the first result that he ordered six, and advertised not one white elephant but a whole herd. He mentions that the late George M. Allerton, B. M. Hotchkiss, and others connected with the Glove company went to New York to see the inflated rubber elephants exhibited.

Mr. Squires had four sons, whom he introduced into the rubber business as soon as they left school, and three of them are still rubber men. Eugene D. holds his father's former position as foreman of the clothing department; Arthur C. is with The B. F. Goodrich Co. at Akron; and George S. with the Conant Rubber Co. in Boston. Mr. Squires will now make his home at Bridgeport, with his daughter, who is the wife of Noyes E. Alling, president of the Alling Rubber Co., operating several retail stores in Connecticut. Never having had a day's illness, Mr. Squires appears hale and hearty. He treasures among the mementoes of his connection with the Glove company a gold watch presented to him by the employes of his department about 25 years ago. During his long residence in Naugatuck he was one of the most respected citizens of the place.

RUBBERS AND LEATHER SHOES.—There are good arguments for the wearing of rubber shoes, even for those who do not believe it necessary to keep their feet dry in snowy weather. The water made by melting snow has an especially injurious effect on leather. It destroys the leather rapidly, and shoes subject to such treatment will wear out in a very short time unless they are protected by overshoes.—*New York Sun.*

RUBBER TIED RICKISHAS.—The *Straits Times* reports the introduction on the streets of Singapore of fifty smart looking rubber tied jinrickshas, to be hired at higher than the usual rates. They are owned by a syndicate, which expects to find it necessary soon to increase the number.—Rubber tied jinrickshas have been made for several years at Reading, Pennsylvania, for export to Yokohama.

THE MANUFACTURE OF WOOL AND KNIT BOOTS.

THERE is no make of footwear more comfortable or better adapted for the use of the farmer, lumberman, and other workers exposed to the severe cold of a northern winter, than the uncouth knit or felt boot, with foot encased in stout rubber "perfection" shoe. The reason is that the porous light weight wool structure not only affords warmth by the nonconducting effect of the included air, but also permits enough ventilation to keep the feet dry.

These goods are manufactured by the Mishawaka Woolen Manufacturing Co., under the patents of the late Messrs. Beiger and Eberhart, former president and superintendent respectively of the company. The mills of the company are situated at Mishawaka, Indiana, on the St. Joe river, and are operated by water and steam power. The plant is modern in every respect and has been undergoing constant enlargement for the past six years. The present daily output is 6500 pairs of boots, besides socks and a general line of heavy rubber footwear.

The processes employed in the manufacture of the woolen portion of these combination goods are particularly interesting. The grade of wool especially adapted to this class of goods is that known as carpet wool, of long coarse fiber. The bulk of it comes from the great wool centers of southern Russia, Bokhara, and the Oriental countries. The rough wool is very dirty and is first of all sorted for quality and colors, then subjected to a process of scouring to cleanse it. It is subsequently dried and dusted by fans and passed through a machine known as a "batch picker," in which weighed amounts of the various grades and colors are intimately blended or mixed. This operation corresponds to compounding in rubber work, and is done with a similar object in view—*i. e.*, to obtain a stock of definite cost and color suited to the goods to be made. From the batch picker the wool passes to the carding machines, where the fibers are combed out or laid in the same general direction. For the knit goods the next step is spinning the yarns, and for the felt goods the formation of a "bat" or wadding-like sheet built in plies on a special machine.

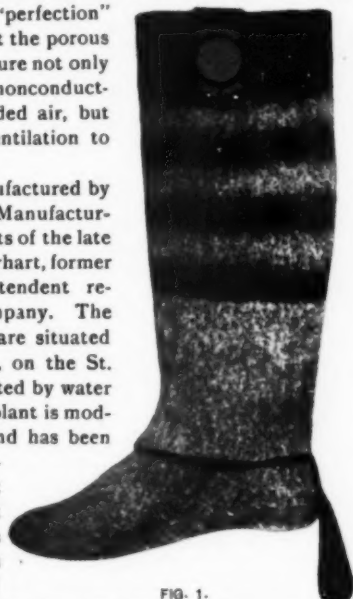


FIG. 1.

COON TAIL KNIT BOOT WITH SNOW EXCLUDER.

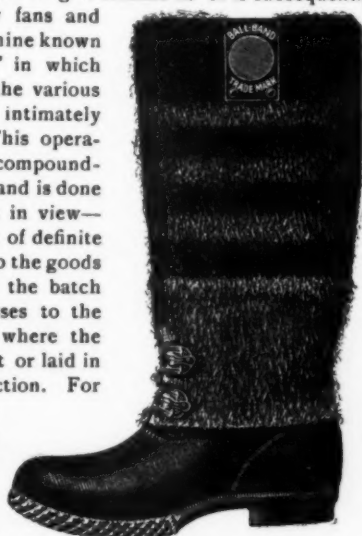


FIG. 2.

APPLICATION OF SNOW EXCLUDING DEVICE.

I. The Knit Boot.

Beginning with the yarn, the first process in making the knit boot is the knitting of a mammoth sock in two parts. The great size is necessary in the sock to obtain the weight of material necessary to permit the subsequent fulling and shrinking operations. The foot portion of the sock is knit on a small circular hand power machine, because its variable width and turning the heel is not as simple as the straight leg part. The latter is knit on a power machine run at high speed. Both foot and leg are knit with three yarns to give weight and bulk to the goods.

A peculiar knit boot called the "coon tail" (Fig. 1) is provided with a snow excluding device, and the leg is stripped somewhat after the style of a raccoon's tail. The snow excluder consists of a double ankle portion which lays down over the rubber shoe and effectually keeps the snow out of it (Fig. 2). In order to make the boot in this way the foot is simply knit



FIG. 3.

RELATIVE SIZE OF KNIT BOOTS BEFORE AND AFTER SHRINKAGE.

into the leg at a point several inches above the beginning of the straight tubular section which forms the leg, instead of at the beginning as in the ordinary form of boot. The cross coon-tail stripes are put into the leg by alternately shifting on and off the knitting needles, while the machine is in motion, the yarns of the body color and the darker yarns of the stripes.

The illustration (Fig. 3) gives an idea of the comparative sizes of the knit boot as first knit and as finished. After the knit boot comes from the knitting machine, its subsequent treatment is the same as that for a felt boot once formed in the rough. At this point the mode of making the start of the felt boot will be taken up and this will be followed by the consideration in detail of the finishing process in manufacture for both knit and felt.

II. The Felt Boot.

The carded wool passes direct to the machine in which it is formed into the "bat." The bat is a sheet of fluffy layers built



FIG. 4.

PARTLY FELTED BAT FOR WOOL BOOT.

up diagonally across until it is about two inches thick. It is then divided by hand into rough squares each sufficient for a single boot. One of the illustrations (Fig. 4) shows such a square of bat after the first operation upon it toward forming the boot. This first operation consists of felting it across the middle by a special machine. This machine consists of a hollow steam box with its upper surface corrugated and perforated. The bat is placed upon this and another finely corrugated iron plate of tongue shape is closed down upon it, and caused to vibrate back and forth at a high speed. This steaming, rubbing, and compressing quickly brings about the felting or interlocking of the wool fibers.



FIG. 5.

FELT BOOT BEFORE AND AFTER SHRINKAGE AND PREVIOUS TO SHAPING.

The next step is to close and felt the bat in the form of a seamless bag (Fig. 5.) This is similar to the first felting, except that it is done on a "horn" or machine composed essentially of a middle or tongue shaped hollow iron, corrugated and perforated for the escape of steam. Hinged at the back end of this part are top and bottom concave covers which close over the bat folded about the "horn."

By the action of the steam and rapid vibration of the upper cover plate the frayed edges of the bat are thoroughly felted into one body and the bat leaves the "horn" as a seamless loosely felted bag. The extra thickness of material where the bat is closed over forms a reinforcement for the sole and back of the leg, and receives leather stays and straps as guards against chafing or aids in removal of the boot by the wearer.

The knit and felt boots being thus formed in the rough, are subjected to the same process of shrinking, shaping, drying, and finishing. These processes begin with fulling. The goods are placed in the fulling mill, a wooden box in which they receive a thorough pounding in the hot fulling liquor by a huge mallet swinging like a pendulum. When this treatment has



FIG. 6.

BOOT TREE COLLAPSED AND DISTENDED FOR FORMING SHRUNKEN WOOL BAG INTO BOOT SHAPE.

removed the grease from the wool and reduced the huge baggy shapes to slim thick walled tubes (see Fig. 5), the goods are thoroughly washed to remove the fulling liquor. When dried they are ready to receive their final shape. To effect this the shrunken bag is placed for a moment over a vertical perforated form or pipe and steamed. Thus rendered hot and pliable it is slipped quickly over a collapsible boot tree (Fig. 6), which is then carefully expanded and the narrow bag under the guidance of the operator's hand expands to the size and shape of a boot. Thus formed the boots are dried on the iron trees hung in wheeled racks or cars. Once dried, the goods thereafter retain their shapes. The final finishing consists in sewing on the front, back and side stays of leather and the straps for drawing the boots on and off the feet.

The knit boot is more expensive than the felt, and much better, being considerably more flexible and by its knitted structure less liable to crack in service, a wear of six or seven winters not being unusual for these goods. The wear of felt boots is equally satisfactory, price being considered. Wool boots are made in a dozen or fifteen styles, including some for women.

The Mishawaka company also make the knit German sock (Fig. 7),



FACTORY OF THE MISHAWAKA WOOLEN MANUFACTURING CO.

for use as a lining to rubber boots or in combination with a rubber shoe of some form, as a light weight substitute for the knit or felt boot (Fig. 8). These goods are knit with



FIG. 7.
THE DOUBLE FOOT GERMAN
SOCK



FIG. 8.
GERMAN SOCK AS WORN WITH RUBBER OVERSHOE.

multiple yarns and sometimes with double feet—i. e., one foot inside another, both being knit to a heavy single ply leg, which is provided with a strap around the top to serve as a garter.

THE TEXTILE GOODS MARKET.

COTTON goods, so far as the rubber industry is concerned, have not had a free movement during the past four weeks. The restraining influence has been high prices incident to the excessively high cost of staple cotton, and although values have fluctuated over quite a range and continue to do so at this writing, sellers in the goods market have stood firmly to their prices, refusing to grant even the slightest concessions when cotton was rapidly declining. Cotton duck mills are curtailing their production in order to make their supply of staple carry them through the season, or until the new cotton crop materializes, while a few mills have stopped their machinery entirely. The majority of these mills bought cotton to cover their contracts last fall, and have refused, as a rule, to make further purchases. What the manufacturer is desirous of knowing is, where the minimum price of the staple is going to stand. If it is to be at 15 cents, then a scale of goods prices can be arranged on that basis and business can forge ahead, but with a market seesawing perpetually, neither the manufacturer nor the consumer is able to get his bearings.

It is safe to assert that the manufacturers of cotton duck have never experienced a season like the one through which they are now passing. They have orders on their books calling for one kind of duck at a wide range of prices. The far sighted rubber manufacturer who last fall placed his contract for enough duck to carry him through the year did so on the basis of 19½ cents a pound. There was not a large number, however, astute enough to take this course, others preferring to defer the matter in hope to see the price of cotton drop and

goods values follow in the downward course. The longer they waited the higher cotton went, and goods followed in the wake. Some of the belting people commenced to cover and paid from 20 to 23 cents a pound, while a few stood off, believing that the market would eventually go the other way, but that time has not yet come, and while some of the rubber manufacturers ordered duck during the past month at from 25 to 26 cents, there are others who have been buying in small lots at the latter figure, with the prospect of having to pay still higher prices later on.

The question naturally occurs, how is the rubber manufacturer who pays 25 cents a pound for duck going to compete with the manufacturer who pays but 19½ or even 23 cents a pound? To-day staple cotton is selling on the spot market at 3¼ cents less than it did just one month ago, and yet duck is firm at the same price it was quoted at that time, for the reason that the price for the latter was based on about 12 cent cotton. If the duck manufacturers were compelled to go into the market and buy cotton now they would advance the price of goods to a parity level which would place duck on a comparatively prohibitive basis. And if it be true as stated in the market that the duck mills are about out of cotton, the above described condition appears to be inevitable, and the mechanical rubber manufacturers who are buying duck in small quantities at a time, will be placed in a bad predicament. The Trenton rubber workers' strike has been a restraining factor in the goods market this month, but with this exception the demand has been of an average kind throughout the month. The consumers of light-weight sheetings have not been as active as the selling agents had predicted that they would be a month ago, and still a very fair turnover has been recorded. Prices that were made a month ago have been tenaciously adhered to, but no advances have been asked, prices remaining stationary.

Following are the prices of cotton middling upland spots at the leading ports:

	New York.	New Orleans.	Liverpool.
February 4	16.25 cents.	15½ cents.	8.08d.
February 11	14.80 cents.	13½ cents.	7.18d.
February 18	13.75 cents.	13½ cents.	7.24d.
February 25	14.30 cents.	13.58 cents.	7.66d.

PRICES CURRENT FOR SHEETINGS FOR THE RUBBER TRADE.

36" Household Favorite	6½ cents.
40" Household Favorite	7 cents.
36" Henrietta, L. L.	6 cents.
39" Henrietta, H.	(net) 5½ cents.
38½" Henrietta, S.	(net) 5½ cents.
40" Henrietta, P. W.	7½ cents.
36" Florence C.	4½ cents.
40" Majestic C. C.	(net) 8½ cents.
40" Majestic B. B.	8 cents.
40" Majestic B. B.	7½ cents.
40" Norwood	6½ cents.
36" India, A. A. A.	7½ cents.
Sheetings.	
40" Highgate ... 6¾c.	40" Selkirk ... 8 c.
40" Hightown ... 7 c.	40" Sellow ... 7¾c.
40" Hobart ... 7¾c.	48" Mohawk ... 11 c.
40" Kingstons ... 8 c.	40" Marcus ... 6½c.
39" Stonyhurst ... 6 c.	40" Mallory ... 6 c.
39" Sorosis ... 5¾c.	36" Capstans ... 4½c.
40" Seefeld ... 8¾c.	Ormburgs.
	40" Iroquois ... 10 c.
	40" 10 oz. Carew ... 13 c.
	40" 11 oz. Carita ... 14 c.
	Ducks.
	40" 7 oz. Cranford ... 10 c.
	40" 8 oz. Chartres ... 10½c.

THE S. R. SMYTHE CO. (Pittsburgh, Pennsylvania), represented in New York by Dr. Oskar Nagel, No. 90 Wall street, have issued a catalogue of Suction Gas Producers for Gas Engines, showing the simplicity and advantages of the construction, and the economy in fuel attained thereby. These producers are built in units from 5 to 150 HP., and yield 1 HP. hour per pound of coal. No boiler or gas holder is required in connection with this outfit. [8"×10¾". 8 pages.]

AMERICAN IMPORTS OF RUBBER GOODS.

AS will be seen from the table in the center of this page, there has been of recent years a material increase in the values of imports into the United States of manufactures of India-rubber and Gutta-percha, as officially reported by the government authorities by calendar years. In connection with this showing THE INDIA RUBBER WORLD has obtained some interviews with the trade which are of interest, though the investigation as yet has not been extensive enough to explain fully the reason for the increase in imports. The rubber trade in this country is so diversified in the matter of lines of goods embraced, and the number of dealers and number of ports of entry, that a complete summary of the import trade could hardly be expected from interviews with the trade in a single city. The matter herewith, though not complete, doubtless will be found to contain information which will be found to be new to many of our readers.

HARD RUBBER.

A REPRESENTATIVE of THE INDIA RUBBER WORLD inquired at the office of the American Hard Rubber Co. for an expression of opinion as to whether there had been any important increase in imports of hard rubber goods. "We can see no increase in the quantity of hard rubber goods bought abroad," he was told. "In fact, practically everything that is needed in this line is now made here, and the foreigner has a very small chance to undersell anybody. Some German combs are imported, but mostly of novel designs, and they are usually bought at a price which cannot make the transaction much of an object to the foreign manufacturer. Probably there were imported last year more than \$50,000 worth of hard rubber goods, all told."

A similar report was obtained at the office of the Vulcanized Rubber Co. Mr. Theodore E. Studley said: "I know of nothing in the way of hard rubber that is imported to any extent, except German rubber combs, and the total of these is not large. Now and then a foreign factory that is overstocked offers a lot at a price that is attractive to the American buyer. Some hard rubber syringe parts are also brought over and assembled here, but that trade is not important. I doubt whether the total imports of hard rubber goods last year were materially larger or smaller than in previous years." Mr. Studley named \$50,000 as probably covering the total value for the year—the same sum that, unknown to him, had been mentioned in the preceding interview.

Mr. Lehmann, of Messrs. Borgfeldt & Co., who is quoted more fully in another place, said: "We have imported more combs during the year, and some other goods in hard rubber, though the whole trade is not extensive. The competition in this line is great, and while we believe that in finish the German article is far superior, the high duty [35 per cent.] gives the home product the advantage. The foreigners, however, keep things moving by devising novelties and packing their goods in attractive shapes. These novelties compel trade, and it is usually some time before the American gets in with his copy, but it always

comes. By that time the German has got something new. The increase in these lines would not cut much of a figure in swelling importations, but would help a little."

There are no American statistics relating to hard rubber goods specifically, but the following figures compiled from the German imperial statistical office may be of interest. The German exports of hard rubber goods to the various countries are reported in metrical weights, with the value of the whole stated in one sum. Estimating the value of such exports to the United States at the average value of all exports in the same class, with the other details given in the official report, the following comparison may be made:

Year.	Weight (kilos). Total.	U. States.	Value Per Kilo.	Value Exports to U. States.
1900.....	897,700	58,200	8.5 marks.	\$117,739
1901.....	821,400	51,100	9 "	109,456
1902.....	990,700	62,600	8 "	119,190
1903.....	1,190,600	93,700	8 "	178,499

These values, of course, are only approximate, but measured on the same basis year by year they show an increase, while the weight of German hard rubber goods exported to the United States has increased in four years from 128,040 pounds to 206,140 pounds.

TIRES.

THE importation of automobile tires is now controlled by two New York houses, agencies for the "Continental" and Michelin tires, respectively. These are both new concerns, and claim to be without details as to the importation of these tires in the past, before the business had become systematized. They express confidence, however, in the future demand in America for

these two well known European makes of tires. There is a certain demand for these tires from the owners of imported automobiles, for replacement when the original tires become exhausted. It may be mentioned that tires imported on vehicles are not entered as "rubber goods," but only tires imported separate. While no figures were given out at the above agencies, enough was said to suggest that enough foreign tires have arrived of late to augment appreciably the imports of rubber goods.

Whether this trade will increase, however, is another question. The manager of the New York branch of an important tire manufacturing company said: "A great many French automobiles have been imported within two years, and hitherto American tires have not been made to fit the rims of these vehicles. Now, however, several of our factories are making tires on metrical measurements, and I expect their product to supplant foreign made tires even on imported automobiles—not only as a matter of convenience, in many cases, but because automobilists are learning that our tires are as good as any others, and even better. Then the foreign tires cost more; they can't be made abroad cheaper than here, except in the item of labor, for the same materials are used, and there is an import duty of 35 per cent. When the owner of a foreign machine, in need of new tires, finds that he can get home made ones just as good, more conveniently, and cheaper, why should

VALUE of United States Imports of India-Rubber and Gutta-Percha Goods for Ten Years.

YEARS.	India-Rubber.	Gutta-Percha.	Total.
1894....	\$303,781	\$ 53,173	\$ 356,954
1895....	309,573	75,962	385,475
1896....	277,580	82,128	359,708
1897....	313,585	142,526	456,111
1898....	355,061	125,772	480,833
1899....	466,270	174,163	640,433
1900....	536,448	252,238	788,686
1901....	462,703	121,485	584,188
1902....	562,997	121,123	684,120
1903....	682,982	442,580	1,125,562

he buy imported ones? But all these conditions have not existed in the past, and I think it probable that the number of tires imported in 1903 was double that of the year before. But the value (including duty) would have been only \$200,000 if 2000 pairs of tires had been imported, and this would have been enough to refit every foreign machine in the country. But what will do most to prevent the growth of imports of rubber tires is the improvement of American automobiles, so that our people need no longer go abroad for high class machines."

SURGICAL GOODS.

GEORGE TIEMANN & CO., No. 107 Park row, New York, are not only extensive dealers in surgical instruments, but one of the oldest houses in the country, dating from 1826. At their office it was stated that as far as they were able to judge, few rubber goods in their line were imported. "We did not buy \$30 worth of imported rubber goods last year," was asserted, "because we have made in this country for our trade all the rubber goods we need. The appliances made in this country are as good as any made abroad, and cost us less. I should say that the importations of surgeons' rubber goods have been falling off every year."

Mr. Brand, manager of the rubber department of the Kny-Scheerer Co., wholesale dealers in surgeons' and physicians' materials, No. 225 Fourth avenue, was of the same opinion. "I am certain," said he, "that the importations of rubber goods for our lines is falling off every year. I believe it was 20 per cent. less last year than the year before, and 100 per cent. less than half a dozen years ago. Our rubber factories are wide awake and furnish everything we need. The imported goods are no better than the home made."

At the drugstore of William B. Riker & Son Co., No. 373 Sixth avenue, is a rubber goods department, the manager of which said: "If there has been any increase in the imports of rubber goods, it has not been in our line. I am positive that fewer surgical appliances and druggists' sundries were brought in last year than ever before. The reason for this is simply because we are making better products in this country all the time. I hardly know of an article now which can be bought abroad that is any better than can be made, and is made, at home. Take for instance such goods as soft rubber catheters, alimentary tubes, etc.; a few years ago they were largely bought abroad but now they are almost entirely made in this country. Ours are just as good and much cheaper. They may not have exactly as high a finish as those that are imported, but they are just as well made. In other goods in our line there is very little bought abroad. In fact, it is a rare thing to see a water bottle or a fountain syringe from the other side, and when you do they look antiquated and out of date. I should say that the importations of surgical goods last year were from 20 to 40 per cent. less than for the year previous. In fact they grow less every year. The American manufacturers are supplying the demand."

CLOTHING.

INQUIRIES in regard to waterproof clothing failed to elicit any details having a bearing upon the increased imports of rubber goods. At several department stores it was stated that there had been no increased demand for foreign mackintoshes or rubber coats. "I cannot say that we import any more stuff in value now than formerly," said the manager of the rubber department in one of the largest stores. "The situation has changed in this way: Formerly we imported many kinds of cravenettes and waterproof clothing. These things are all made in this country now and made as good as they are abroad. The cravenette business grew so rapidly, and so enormously, that the original

makers could not come near supplying the demand, so the Americans entered the field, and their goods are just as satisfactory as the imported. There is a great deal more cravenetted cloth made and sold here than is imported. The only lines there could possibly have been an increase of imports in is in the very high priced and fancy lines of silk waterproofs which are mainly used by automobilists. There has been a big increase in this line, of course, because two years ago there was nothing at all done in it. But even now I do not think that all told more than \$20,000 worth of such goods is imported. There are some very fair silk waterproof garments made now in this country, and it will not be long until we will cut into the foreign trade."

At the store of the Goodyear Rubber Co., Mr. James Kipp, the manager, declared that if there had been any great increase in the importations of rubber goods, it was not in rubber shoes and clothing. "The truth of the matter is," said he, "that the importation of rubber clothing is constantly growing less. This is because we are making better rubber clothing in this country every year. An English mackintosh is no better than an American mackintosh, and it costs more when imported. I do not see how there could have been much increase in the imports, for we do not meet the goods in the trade."

SOME RUBBER GOODS IMPORTS LOCATED.

ONE place where some ideas as to the increase of importations could be gathered was the large importing house of George Borgfeldt & Co., American agents of The Hanover Rubber Co., Limited. While reticent as to the details of the growth in importations, Mr. Julius Lehmann, manager of the rubber department, admitted that there had been a material increase. "We imported," said he, "more goods last year in almost every line than ever before, and in some lines many times the amount of the previous year. In this connection you might mention rubber sponges, which are comparatively a new article, but which are selling so rapidly that we cannot keep up with our orders. Two years ago there was nothing done in sponges; I don't think it is an over estimate to say that there were several hundred thousand dollars worth brought in last year. So you see that this is altogether gain and would do much toward explaining the increased importations. Another line in which the increase has been very marked is red rubber toys and rubber balls. The American manufacturers, while they imitate these things closely and with considerable success, have never yet been able to get the finish on the toys or the air retaining qualities in the balls. The Germans are past masters in the art of making toys. The originate all the novelties and they secure a softness of texture which makes them unbreakable. In the airtight balls the Germans have a secret process of treating the air which is forced inside, that of itself preserves the inner lining and prevents leaking. Then in design and decoration the balls are unapproachable by the American make. Doubtless twice as many toys and balls were imported last year as in the year previous. In other soft rubber goods there was also some increase. There is nothing like the German acid proof tubing for laboratory and surgical work, and the amount of these imports increased. Then in high class bulbs the Americans have never reached the Germans in softness and in lasting qualities. This double bulb affair for pyrography, for instance, is not made in this country at all, and there are large numbers of them sold."

Another line in which there has been an increase in imports is rubber sponges. A. H. Smith, No. 84 Chambers street, New York, stated to THE INDIA RUBBER WORLD that in July, 1901, he imported 36 dozen of the Russian make of sponges. By the end of the year he had imported and sold 862 dozen, since which time the demand has grown steadily. He reports hav-

ing sold as many as 12,000 dozen in a single six months, and at present each month shows an increase. The business in the last six months of 1903 was 50 per cent. larger than for the last six months of 1902. Rubber sponges are being made in the United States, and sold, but Mr. Smith does not consider them equal to the imported article. There is a single item of official statistics bearing upon this subject, by the way. The United States consulate at St. Petersburg reports the following values of exports of rubber sponges to the United States:

Quarter ended March 31, 1903.....\$15,181.41
Quarter ended June 30, 1903.....19,403.53

Total, six months.....\$34,584.94

A FEW MORE DETAILS.

THE United States official report of the values of goods exported from various foreign ports to this country during the fiscal year 1902-03 is by no means complete, as regards any one class of goods, owing to the want of uniformity in classification, but the following details, compiled from it, may be of interest:

Rubber Goods.—London (including clothing), \$262,885; Hamburg, \$134,002; Hanover, \$45,246; Leipzig, \$10,614.

Toys and Dolls.—Brussels, \$50,850; Budapest, \$4736.

Rubber Tires.—Genoa, \$2770.

Elastic Webs.—Leicester, \$130,102; Manchester, \$40,119; Nottingham, \$2647; St. Etienne (ribbons), \$133.

Rubber Syringes.—Milan, \$117.

Waterproof Garments and Cloth.—Manchester, \$8232; Rotterdam, \$639

India-Rubber Sheets and Ponchos.—Manchester, \$3442.

Oilcloth and Waterproof Cloth.—Liverpool, \$224,117.

Vulcanite and Celluloid Goods.—Edinburgh, \$2526.

Rubber Sponges.—St. Petersburg, \$34,585.

RUBBER GOODS IN COMMERCE.

GERMAN IMPORTS AND EXPORTS.

THE details in the accompanying table in relation to the German foreign trade in India-rubber goods has been compiled from a recent publication of the Imperial statistical office. The figures given comprise the values (in German marks) for the past three calendar years. It should be noted that the figures given for 1901 and 1902 differ from those given for the same years in earlier publications from the same office, and reproduced last year in THE INDIA RUBBER WORLD. There is not space here for an analysis of the differences, which doubtless are due to some modification having been adopted in the classification of goods.

IMPORTS.			GERMANY. CLASSIFICATION.	EXPORTS.		
1901.	1902.	1903.		1901.	1902.	1903.
2,644,000	2,345,000	2,644,000	... Rubber threads and sheets...	2,871,000	3,474,000	4,405,000
414,000	434,000	445,000	... Bicycle parts (tires, etc.)...	a	a	a
734,000	745,000	875,000	Textile goods covered with rubber.	11,962,000	11,630,000	13,287,000
234,000	216,000	206,000	... Hard rubber goods...	7,393,000	7,995,000	9,608,000
4,843,000	4,035,000	3,756,000	... Rubber boots and shoes...	1,318,000	1,728,000	2,039,000
196,000	280,000	196,000	Other fine goods of soft rubber...	1,047,000	1,028,000	979,000
107,000	105,000	86,000	... Toys of rubber...	b	b	b
3,104,000	3,546,000	3,965,000	Waterproofed goods and apparel.	3,970,000	4,678,000	5,167,000
73,000	354,000	539,000	... Tires, etc., including fabrics...	c	c	c
59,000	49,000	81,000	... Elastic fabrics and hosiery...	339,000	329,000	363,000
236,000	183,000	293,000	... Hemp hose, with rubber...	1,796,000	2,527,000	3,421,000
43,000	36,000	40,000	... Hard rubber...	306,000	251,000	173,000
....	....	....	... Unclassified rubber goods...	140,000	172,000	120,000
12,087,000	12,328,000	13,126,000	..... Total in Marks.....	31,142,000	33,812,000	39,562,000
£591,124	£602,911	£641,896	..... Total, Sterling.....	£1,523,583	£1,653,793	£1,934,812
\$2,876,706	\$2,934,064	\$3,123,988	..... Total, U. S. money.....	\$7,411,796	\$8,047,256	\$9,415,786

a, c Included in exports of Bicycles and Parts [which amounted in value in 1903 to 18,715,000 marks; value of rubber parts not stated.]

b Included in exports of Toys, all sorts [which amounted in value in 1903 to 56,840,000 marks; value of rubber toys not stated.]

RUBBER BOOTS AND SHOES.

GERMAN imports and exports (in kilograms) for three years :			
From—	1901.	1902.	1903.
Russia.....	532,700	517,300	463,400
U. States.....	55,800	119,300	91,200
Austria.....	28,620	9,100	55,500
G. Britain....	28,200	14,500	39,700
Sweden.....	51,000	44,700	28,400
Not stated....	12,800	8,800	9,700
Total.....	707,100	733,700	682,900

To—	1901.	1902.	1903.
G. Britain....	147,500	195,400	203,900
Austria.....	6,000	7,900	43,000
Turkey.....	2,100	12,600	40,300
Switzerland...	9,900	19,700	25,600
Roumania....	5,900	22,200	14,300
Not stated....	68,200	87,800	80,700
Total.....	239,600	345,600	407,800

GREAT BRITAIN AND IRELAND.

OFFICIAL statement of values of exports of manufactures of Caoutchouc, for three calendar years:

	1901.	1902.	1903.
Boots and shoes.....	£ 176,387	£ 171,674	£ 224,439
All other.....	1,086,028	1,042,884	1,204,984

Total value..... £1,262,415 £1,214,558 £1,429,423

Value of "Apparel and Slops," waterproofed by any process: In 1902, £202,244; in 1903: £282,444.

Exports of rubber footwear amounted to 138,084 dozen pairs in 1901; 144,014 dozen pairs in 1902; and 197,838 pairs in 1903.

No statement of imports of such goods is available as yet for 1903.

FRANCE—COMMERCE SPECIAL.

VALUES of rubber goods imports and exports for three years:

	1901.	1902.	1903.
Imports.....	francs 16,290,000	16,552,000	18,881,000
Exports.....	8,898,000	9,826,000	10,907,000

The movement for 1903, classified officially, was as follows: values being stated in francs:

	Imports.	Exports.
Unvulcanized sheets and vulcanized threads...	5,980,000	....
Elastic tissues.....	861,000	2,471,000
Overlaid tissues.....	101,000	185,000
Card tissues.....	338,000	3,000
Made up clothes.....	465,000	466,000
Shoes.....	3,406,000	652,000
Belting, hose, tires, etc.....	7,730,000	7,130,000

Total..... 18,881,000 10,907,000
U. S. gold..... \$3,604,033 \$2,105,051

The increase in imports was shared by all the classes listed, but the largest increase was in footwear. There was a decline in exports in several classes, but an increase of 2,115,000 francs in "Belting, hose, tires, etc," due probably to the growing trade in tires.

AUSTRIA-HUNGARY.

OFFICIAL returns of values of rubber goods in commerce, converting the crown at 20.3 American cents:

	1902.	1903.
Imports.....	\$2,262,902	\$2,801,339
Exports.....	1,875,033	2,294,687

The increase was general, in the lines both of imports and exports. More rubber footwear was imported and more ex-

ported. Exports of hard rubber goods increased from \$416,231 to \$564,340.

RUBBER BOOTS AND SHOES.

WEIGHTS of imports and exports for two years past:

FROM—	1902.	1903.
Russia.....	kilos 174,400	169,800
United States..	10,800	29,600
Great Britain..	7,100	27,700
Germany.....	13,900	21,100
France.....	400	1,600
All other.....	11,700	6,600

Total..... 218,300 256,400

To—

TO—	1902.	1903.
France.....	kilos 93,000	116,300
Turkey.....	60,200	113,600
Roumania.....	79,600	97,700
Germany.....	118,800	95,700
British India..	40,600	90,000
Other lands...	170,700	151,900

Total..... 571,900 645,200

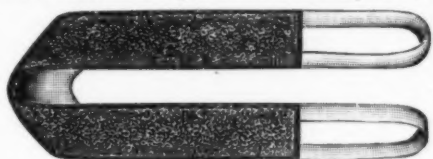
NEW GOODS AND SPECIALTIES IN RUBBER.

RUBBER SPONGE BATH MIT AND BATH BELT.

THE latest additions to the novelties made from rubber sponge material are a Bath Mit and a Bath Belt, which are represented in the two illustrations herewith. These goods involve in their construction an entirely new idea. In the case of each strong duck is used, with one side covered with a thick layer of rubber sponge, the shape of the article being sufficiently indicated in the engraving. Many applications of these articles for the toilet will readily suggest themselves, but it may be mentioned that they have been heartily commended by



BATH MIT.



RUBBER BATH BELT.

physicians for massage. These goods are protected by patents. [Hanover Rubber Co., Limited—George Borgfeldt & Co., American agents, New York.]

MILWAUKEE PATENT PUNCTURE PROOF TIRE.

THE Continental Rubber Works (Erie, Pennsylvania) have acquired the business and goodwill of the Milwaukee Patent Puncture Proof Tire Co., including their patents and the exclusive right to manufacture the Milwaukee Patent Puncture Proof Tire. The Milwaukee company was incorporated in August, 1898, to exploit this tire, and from the beginning the tires sold by them have been manufactured by the

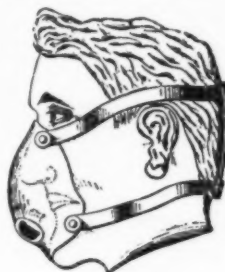


parties now in control of the Continental Rubber Works. The latter company believe that a growing demand exists for pneumatic tires that will give a better service than some that have been placed on the market, and that can be depended upon at all times. They believe that a good market exists in which the question of service outweighs the question of price. The Milwaukee puncture proof tire is a single tube tire, in the manufacture of which a new feature has been introduced with a view to lessening the tendency to puncture. The puncture proof material used is referred to as being applied to the fabric in the tread of the tire in such a way as not to detract from the resiliency of the tire—any possible stiffness thus contributed to the tread being offset by the elasticity of the side walls. In forming the tire, the tread is built up of five layers of fabric, between which are interposed three thin layers of carborundum, while the side walls are made only of the usual thick-

ness of fabric and the inner and outer walls of rubber. The weight of the tire does not exceed that of ordinary tires.

PROTECTION AGAINST DROWNING.

THE illustration herewith relates to a mask or appliance adapted to be applied to the face of the wearer, provided with openings, said openings having applied thereto internally short tubes provided with automatically closing valves, and the openings being covered with wire netting or gauze. The mask is also provided with elastic strips adapted for the automatic retention in place of the mask. This device is the subject of United States patent No. 747,793 (December 22, 1903), issued to Johann A. Steenken, and Albert Schutz, of Germany.



"KLEANWELL TINGLE SPONGE."

THIS is a new article in the shape of a rubber sponge for bath use, which was recently invented by a Russian workman, and for which a patent is now pending in the United States. It is simply a layer of the sponge, say half an inch thick, made of convenient size to cover the palm of the hand and bearing across it a heavy rubber strap to go over the back of the hand. The patentable portion of the device consist of the embedding through the center of the sponge of a layer of thicker or more substantial material which, while not entirely solid, is still of sufficient stability to keep the sponge in shape. The accompanying illustration shows the character of the appliance. The sponge will be placed upon the market under the copyrighted name "Kleanwell Tingle Sponge." Each will be packed separately in a box. The owner of the American rights is A. H. Smith, No. 84 Chambers street, New York.



"NIAGRITE," FOR PROTECTING CABLES.

A NEW material for the protection of electric cables against damage by fire is an asbestos felt, sold under the name "Niagrite," which is made in strips 3 inches wide, 36 inches long, and $\frac{1}{8}$ inch thick. When it is to be used the "Niagrite" is first dipped into a fireproof glue, and immediately placed upon the cable and wound spirally upon the same, the strips being continued one after the other until the entire cable is covered. After the whole has become well dried, a coating of the fireproof glue solution is applied over the surface, to seal the joints of the spiral winding and also to prevent the material from frosting, as sometimes happens when there is an excess of dampness. "Niagrite," by this construction and treatment, does not act as a non conductor, which might keep the heat generated by the wires in the cable and affect the internal insulation, but on the

contrary it acts as a conductor and carries away the heat. Where cables are suspended one above another and one burns out, there is danger that the others will be interfered with, but the use of this material prevents trouble with one cable from being communicated to the others. [H. W. Johns-Manville Co., No. 100 William street, New York.]

NEW WATERPROOF GARMENT.

THIS garment is designed to be of especial service to automobilists, cabmen, and others who are exposed to violent weather. While it can be made of any waterproof cloth, it will generally be formed of the heavier materials. It is something between an overcoat and a gown, as will be seen from the accompanying illustrations. It will fit closely around the shoulders

and will have neatly fitting sleeves so that entire freedom of action of the arms may be had, but from the armpits down the garment will widen and be extremely loose, reaching to the ground. The only opening is in front above the waist line and this can be closely buttoned to the neck with a protecting flap. It is claimed that this design will furnish more complete protection to the entire body than any other yet devised and will be equally serviceable to the man on horseback as to the man on the cab seat.

The smaller of the illustrations, from the patent drawing, shows the construction of the upper part of the garment; the larger shows its appearance when worn. Patented by James Kipp—No. 743,174, November 3, 1903. [Goodyear Rubber Co., New York.]

"EXCELSIOR" TIRE PROTECTOR.

THIS is a patented device, for attachment to the wheels of automobiles and other vehicles equipped with pneumatic tires, in



the position indicated in the engraving. The patentees state: "Many owners of cars do not realize that tires are not, in 99 out of a possible 100 cases, punctured by nails or other sharp instruments as soon as the nail is picked up by the tires, but after the wheel has made several—possibly many—revolutions.

But they are beginning to realize this fact, and will see the

value of our device; also that when a tire or casing has been punctured and, possibly, a large hole has been blown out of the same, the tire or casing is never as good after having been vulcanized again, because of the heat required in the process, which must injure the fabric. These protectors are intended for rear wheels only, as it is very seldom that front tires are punctured, except by glass, and no device will prevent glass from puncturing." The protector is attached to the body of the vehicle, just ahead of the rear wheel, so as to allow the plate, which should rest lightly upon the tire, to hang almost perpendicular. When in this position the bracket, from which the plate is suspended by two links, will be far enough away from the tire to prevent coming in contact with the same; the bracket not being near enough to touch the tire. [The Howard Manufacturing Co., Attleboro, Massachusetts.]

"PAPIRUS" PACKING.

A NEW article for hot water packing and valves, and for use generally in places where rubber packing is liable to deteriorate rapidly, is being supplied under the name of "Papyrus." It is composed principally of paper pulp treated with chemicals, and then forced under great pressure into various shapes, as valves, discs, rings, packing, and so on. [Sayen & Schultz, No. 21 North Thirteenth street, Philadelphia.]

RUBBER AT THE SPORTSMAN'S SHOW.

AT the annual Sportsman's Show, at Madison Square Garden, New York, February 20-27, the rubber industry was not particularly in evidence. The bicycle interest was represented chiefly by the Pope Manufacturing Co. The Pope company offered some novelties in their 1904 bicycles that will tend to regain for the wheel some of its popularity that reached its height about eight years ago. The most radical improvement shown is a two speed gear chainless, fitted with coaster brake and cushion frames both fore and aft. None of these is entirely new except the two speed bevel gear. This arrangement made upon the same sliding principle as the changeable gear of the automobile provides the rider with a gear of any desired speed for level road riding with an ability to instantly change to a low gear for hill climbing, heavy going, or riding against the wind. The advantages of such a device can be appreciated by every bicycle rider for it settles at once the old debate whether it is better to ride a high gear and get speed or a low gear and secure ease.

The only separate tire exhibit in the show was that of the St. John non puncturable, offered by the St. John Rubber Tire Co., No. 116 Broad street, New York. This tire, made both for automobiles and bicycles, is a solid tire, or a combination of two solid tires joined by cushions. The road tread is made solid and is constructed in one piece, as is also the inside section which fits into the rim. Between these two rims are a series of soft cushions placed at equal distances apart and joining the two. It is claimed that this tire will not spread when going at a high speed, is puncture proof and will be found as resilient as a pneumatic tire.

In camping outfits the Pneumatic Mattress and Cushion Co. had an interesting exhibit. This concern, with offices at No. 2 South street, New York, has a factory at Reading, Mass. It manufactures pneumatic mattresses, cushions for boats and camp chairs, pillows, etc.

Abercombie & Fitch, Nos. 314-316 Broadway, New York, dealers in sporting materials exhibited some rubber goods for camping outfits although it seemed to be the policy to use duck wherever possible. They offered, however, wading boots and pants, leggings, gun-cases, boat cushions and mattresses.

THE RUBBER TRADE IN CHICAGO.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: By common consent February was a quiet month in the local rubber goods market. January trade was exceedingly quiet, in all lines except rubber footwear, and February has not been much better. The only line showing an improved condition has been tires. The Chicago automobile show, and the approach of what promises to be the best automobile season the country has known, have kept the representatives of the tire manufacturers exceedingly busy.

There is now a feeling that general business conditions are improving, and that March will show good results, and there is a better undertone in the local rubber goods market than has been felt for months. Particularly is a good trade anticipated in the rubber footwear line. This has been a record winter for snow in Chicago. There has been snow continuously since Thanksgiving day, with the temperature below zero sixteen times thus far, the extreme cold preventing a thaw, and thus in a measure checking the demand for rubbers. But the thaw will come soon, and it is likely that the month of March will cause a revival of the demand for rubber footwear that will tax the jobbers to keep up with the needs of the retailer.

* * *

MR. T. F. BLANCHARD, who for many years has been general manager of the Chicago Rubber Works of the Mechanical Rubber Co., has resigned his position and retired from business. He has been connected with the factory since its establishment in 1882. His brother, D. C. Blanchard, who has been with the company since 1887, and for several years has been superintendent of the factory, succeeds to the position of general manager. Mr. Blanchard is optimistic regarding the future, in which he seems to be sustained by the present rate of receipt of orders. The factory is being run with a full force, and he states that there are now enough orders in hand to keep it running full time for some months. He is confident the demand is going to keep up; the trouble is to get the goods out fast enough. He says that many people held back from buying rubber goods on the theory that there would be a reduction in price as soon as the manipulation of the cotton market ceased, but they have now been convinced that a cotton shortage exists which will keep prices up until a new cotton crop comes in. Even then the price of cotton duck and sheetings will not be effected immediately so as to bring about a reduction in prices of mechanical rubber goods.

* * *

MORGAN & WRIGHT have decided to open a sales branch downtown, in the automobile district. Hitherto they have never had any selling depot in Chicago, not connected with their factory. When the bicycle business was at its height the firm were often importuned to take this step, but in spite of all inducements they continued to look after their city trade from the factory salesrooms. This new move will doubtless result in other tire manufacturers opening branch stores in the vicinity of the automobile mart. Most of these branch stores are in Lake street, in the heart of the downtown district, but with Morgan & Wright so much nearer "automobile row" they will feel they are at a disadvantage.

* * *

THE Chicago automobile show (on February 6-13) was a great success, measured by the amount of business done. While the total number of visitors was much less than at the New York show in January, the volume of sales ran ahead of that reported for New York. In this evidence of prosperity

the rubber tire companies are understood to have had a good share. The space allotted to exhibitors in the big Coliseum was more liberal than in Madison Square Garden and afforded the best possible opportunity for the display of machines and sundries. The demand seemed to be for the heavier classes of vehicles, such as the powerful touring cars and, as a consequence, when the tire men recorded a sale the amount was larger than the average sale of a year ago. There were no exhibits of rubber goods at the automobile show at Chicago which were not seen at the New York show. The various tire exhibits, and the men in charge, were:

THE DIAMOND RUBBER CO. (Akron, Ohio)—O. S. Tweedy, manager, and S. G. Frost and F. H. Hotchkiss of the Chicago office; W. H. Robey, Minneapolis.

FISK RUBBER CO. (Chicopee Falls, Mass.)—H. T. Dunn, general manager; B. H. Pratt, Chicago; D. T. Keenan, Buffalo; Edward Broadwell, Detroit; Richard Belt, Omaha; Frank Kerner, Minneapolis.

G & J TIRE CO. (Indianapolis, Ind.)—H. O. Smith, president; J. B. Anderson, general manager; H. A. Githens, sales manager; C. H. Semple, Chicago office; A. E. Vinton, Indianapolis.

THE B. F. GOODRICH CO. (Akron, Ohio)—W. H. Mason, Chicago office; O. R. Cook, C. B. Tellis, general representatives.

THE GOODYEAR TIRE AND RUBBER CO. (Akron, Ohio)—B. J. Henning, A. F. Osterloh, Fred Campbell, P. J. Konz, and F. A. Hastings, Chicago office.

THE HARTFORD RUBBER WORKS CO. (Hartford, Conn.)—J. W. Gilson, secretary; S. E. Gillard, Chicago office; W. H. Dowdy, Minneapolis.

INDIA RUBBER CO. (New Brunswick, N. J.)—Claude Platt, general representative.

MORGAN & WRIGHT (Chicago)—Arthur Phelps, sales manager; J. J. Alexander, Chicago; J. C. Weston, Detroit; L. J. Cooper, R. H. Campbell, J. D. Burton, C. S. Marshall, E. P. White, J. C. Clinton, Chicago.

Exhibits were made also by the Firestone Tire and Rubber Co. (Akron, Ohio); the Continental Caoutchouc Co. (New York); the Tennant Auto-Tire Co. (Springfield, Ohio); the Fawkes Rubber Co. (Denver and New York); and the B-OK Tire Co. (Chicago).

* * *

SALESMEN who have been in the South for various tire concerns report a great improvement in that section during the last year. The advance in the price of cotton, which has proved so inconvenient to the mechanical rubber industry through the increased cost of cotton duck and sheetings, has made the South more prosperous than it has been in years. As a result these traveling salesmen say there is an unprecedented demand for automobiles and tires for that section. One salesman said that when he went through the South a year ago on his initial trip he had hard work to interest any one in automobiles or tires. This year he said that there was scarcely a city that did not have representatives of from one to half a dozen automobile manufacturers. He said that an agent opened a store in Savannah, Georgia, the day before Thanksgiving for a well known automobile and in two days he had made three sales and ordered the machines. He says the prospects are bright for a good year all through the South.

* * *

A RECENT decision of the Illinois appellate court is of interest to the tire men as well as the automobile owners. A year ago the Chicago city council passed an ordinance requiring automobile owners to take out a license to operate an automobile and the city electrician issued this license, bearing a consecutive number. The automobilist was required to provide a tag bearing this number in figures 3 inches high, in white, upon a black background. This was done under the police power of the city as a means of identification in case of an accident. The court, when the matter was brought before it on appeal by A. C. Banker, declared that the city had no power to compel the

licensing of automobiles. The court said that "the speed of the automobile may be regulated and reasonable safety appliances, such as gongs and brakes, may be required, but to compel one who uses his automobile for his private business and pleasure only to submit to an examination and to take out a license (if the examining board see fit to grant it), is imposing a burden upon one class of citizens in the use of the streets not imposed upon others. We must, therefore, hold this ordinance, so far as it obliges appellee to take out a license before he can use his own automobile, in his own business or for his own pleasure, is beyond the power of the city council, and is therefore void."

This recalls a similar move that was made when cycling was the rage. The Chicago council passed an ordinance requiring that each bicycle be registered and licensed and provided with a tag and number, and providing for a fee of \$1. The ordinance was signed by the mayor and then Judge Lorin C. Collins attacked it in the courts. It never got beyond the circuit court, however.

THE Home Rubber Co. (Trenton, New Jersey) have made a change in their Chicago agency. Mr. H. L. Davis, who for two years has been manager of their branch at No. 17 La Salle street, has been transferred to the main office at Trenton, as general sales agent. The Globe Machinery and Supply Co. (Des Moines, Iowa) have taken over the La Salle street office, and the Home company have secured a location at No. 83 Lake street, from which Messrs. Howell and Brady will look after the Chicago trade.

THE RUBBER TRADE IN AKRON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: According to a local rubber man the makers of automobile tires are preparing for a rush of orders which is expected to come pouring in some time within the next few weeks. Local manufacturers have found this to be a backward spring as far as orders for automobile tires are concerned, owing to the fact that the selling agreement among the manufacturers prohibits the selling of tires with the former time allowance. But automobile makers are beginning to send out their 1904 automobiles, and the demand for tires is increasing. As long as the manufacturers refused to sell tires and allow their customers to pay for them any time inside of 60 or 90 days, as was frequently done, the auto makers bought tires for their machines before the demand for them commenced, but since the selling agreement was put into effect and they cannot secure such advantageous terms, the auto manufacturers are waiting until the demand for their machines begin. A well known automobile company recently announced that it had already disposed of 400 of its 1904 models, and was preparing to ship them at once. This of course means an order for 400 sets of tires, and doubtless other companies could report similar sales. Tire makers do not doubt that the tire trade this season will exceed that of last, when it was the largest in the history of the trade.

THE B. F. Goodrich and Diamond Rubber companies are among the parties most interested in the present agitation regarding the preservation of the Ohio canals which is being fought in the state legislature. The factories of these companies are built on the banks of the Ohio canal, and if the canals of the state should be done away with, as is being urged at present, both companies would suffer. All of the water used in the big plants of these companies is secured from the Ohio canal,

and they will make a spirited fight to have the Ohio canal, at least, retained. Should this canal be done away with by the legislature, it would mean an increase of thousands of dollars annually in the water rent of the companies, which they wish to avoid. There are a number of other factories along the banks of the canal which would also suffer by such action, and the companies have banded together to fight the project. Colonel George T. Perkins, president of the Goodrich company, has been made chairman of the association, and has power to call meetings and make arrangements for conducting the fight. It is said that the local association will spend a great deal of money in helping carry on the work of the Ohio Canal Association in the interest of the canals.

* * *

COLONEL GEORGE T. PERKINS, president of The B. F. Goodrich Co., will, it is said, retire from the presidency of the Second National bank in March, although he will be retained on the board of directors. Mr. Perkins has been connected with this institution for a number of years, and has always been considered one of the ablest financial men in the city. In March the Second National and the Citizen's National banks will be consolidated, forming one of the largest banking institutions in this part of Ohio. The added duties which this will entail are considered too arduous by Colonel Perkins, it is said, and for this reason he will not accept the presidency of the new institution.

* * *

MENTION has been made in these pages of the rubber bowling ball which is being made at the local plant of the American Hard Rubber Co. Previous to this time the ball has been more of an experiment than anything else, but it has now taken its place among the standard products of the company. During the week of February 8-13 the national tournament of bowlers was held in Cleveland, Ohio, and at the same time the annual meeting of the American Bowling Congress, their national organization, was held in the same city. This organization had the power to make or mar the future of the rubber ball business, and a great many bowlers believed that it would place a ban upon the rubber ball, thus destroying a profitable business for hard rubber companies. One thing which caused the bowlers of the West to believe that the hard rubber ball would be knocked out was the fight which was being waged against it by the Brunswick-Balke-Collander Co., manufacturers of bowling alleys and equipment. They, of course, were opposed to the hard rubber ball, as the general use of the ball would deprive them of a considerable income, and it is said that they made a hard fight against its use. They were able to do this by reason of the fact that several of their employes were members of the executive committee, and they were aided by the fight of the Eastern bowlers for an all-wood ball. [See an article on this subject following this letter.—THE EDITOR.] But when the matter came up in the meeting of the executive committee the hard rubber ball was not legislated against, and the American Hard Rubber Co. are now preparing to place them on the market. The cost of the ball may prevent it from becoming general in use, although when once bought it will last a lifetime. But the fact that a *lignum vitae* ball costs about one fifth as much as the hard rubber ball will prevent it from becoming as common as the wood ball. The crack bowlers, to whom expense is not an object, will, of course, use the ball, and a big trade is predicted. One of the features of the tournament was the exhibit of hard rubber balls in the big armory where the tourney was held. This exhibit was in charge of Joseph Dangel, superintendent of the American Hard Rubber Co. plant, and it attracted much attention. A team of bowl-

ers from the rubber factory, captained by Mr. Dangel, rolled in the tournament, each man using a hard rubber ball. The members of the team are Joseph Dangel, T. M. Guenther, Louis Ball, Harry King, and Edward Bullock. While the team did not win any prizes, it advertised the hard rubber ball well, and accomplished its purpose.

CAPITALISTS of Alliance, Ohio, are trying to secure the plant of the Woodruff Automobile Co., of Akron, and it is claimed that they will be successful. They have made good offers to the company, and it is stated that they will be accepted.

Aaron Stauffer, an employé of the Diamond Rubber Co., has instituted suit against that company for \$6000 damages, alleging that through the explosion of gases in the reclaiming plant of the company on February 24, 1903, he was badly burned, suffered the loss of two fingers, and had his eyebrows and lashes and mustache burned off. He alleges that on account of the fact that the room in which he was working was improperly lighted it became necessary for him to strike a match, thus causing the explosion.

Rumors which have found place in the newspapers of College Point, New York, where additions are being made to the plant of the American Hard Rubber Co., to the effect that the company's plant at Akron is to be closed, naturally caused some concern here. All knowledge of such intended change, however, is denied at the Akron branch of the company.

At the annual meeting of the Northern Ohio Traction and Light Co., Mr. Will Christy, president of the Firestone Tire and Rubber Co., was elected first vice president. Mr. Christy has served in this capacity for a number of years, and is one of the best known traction men in the middle West.

THE RUBBER BOWLING BALL.

THE use of the hard rubber ball for bowling is something new but it opens up a new use for the material, and may result in the exclusive use of this ball and the relegation of the wooden ball to the realm of the "has beens." At present the hard rubber balls are not numerous but they are growing in number, and they have been recognized by the national bowling congress. In speaking of the Cleveland meeting and the discussion of the rubber ball, Mr. A. F. Troescher, the treasurer of the Brunswick-Balke-Callender Co. (New York) said: "We did not oppose the recognition of the rubber ball. In fact it was none of our business, and if it had been we would have had no voice in the matter, for the national congress of bowlers was specially anxious that no tradesmen should take any part in its affairs. We have no objection to the rubber ball; in fact they are made for us by the American Hard Rubber Co., and we sell them whenever we can. We have been endeavoring for ten years to find some ball which will take the place of the *lignum vitae*—for the wood is getting scarce—and we rather incline to the idea that hard rubber has solved the problem.

"The hard rubber ball does not wear out anything like as soon as the wooden one; the finger holes do not crack, and if they did hard rubber balls could be repaired. The main objection to the rubber ball is its high cost. The only opposition to the use of rubber that I have heard of comes from the New York Bowling League. This organization has adopted rules of its own, regardless of the national congress. These rules, which govern matches, require the use of balls made entirely of wood and weighing not more than 16 pounds. I think that in future rubber balls will be more generally used."

The above article should be read in connection with the preceding correspondence from Akron.

THE RUBBER STRIKE AT TRENTON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Local No. 4, Amalgamated Rubber Workers' Union of America, on January 25, inaugurated a general strike in the rubber factories in Trenton on January 25, affecting nine establishments, and which is still in progress.

As early as April last a request was made to each of the nine rubber manufacturing concerns in the city that a committee of the Rubber Workers' Union be met, to talk over the matter of the manufacturers using the union label on all their products. As a result of this request, an informal meeting of the manufacturers was held, at which all the local factories were represented. The entire subject was gone over carefully, when it was decided that, while the using of the label might in itself appear a small matter, it would involve distinctly a recognition of the union, and the demand was refused.

The strike in January was preceded by a demand for a uniform increase in wages, which was refused by the companies, acting separately. The position was taken that the manufacturers would treat with their employés as individually, and not through the medium of their labor union. Upon the declaring of the strike, the factory owners organized "The Rubber Manufacturers' Association of the City of Trenton," for the promotion of their mutual interests, with these officers: Watson H. Linburg, president; W. L. Blodgett, secretary; W. J. B. Stokes, treasurer. From an official of this organization your correspondent is advised as follows, as to the manufacturers' position.

"On the Monday before the strike was ordered each rubber manufacturing company received a written notice from the union demanding (1) the recognition of the union, (2) the adoption of the union label, and (3) the adoption of the scale of wages submitted with the demand. With the notice was a statement that if the demand was not granted, drastic methods would be taken to enforce it. Inasmuch as the scale asked for was all out of conformity with the wages being paid, the advance was denied. The manufacturers claimed that their men were being paid according to their skill and ability, and that many were receiving higher wages than they would receive under the scale asked for. Aside from these cases the new scale was, on an average, an increase of 10 per cent.

"The refusal of the manufacturers to grant the increase was followed by the strike. The men refused to work and picketed from 25 to 100 strikers at each mill to keep out non union workmen. Steps were at once taken to fill the strikers' places and all but two of the companies were able to run their mills with reduced forces. On an average about 25 per cent. of the usual force was at work. At two mills no attempt was made to run, the companies preferring to give their men a week's time to consider the matter. These mills resumed shorthanded the second week, with the help of green hands, secured some here, and others imported. The appearance of the non union workmen on the streets at quitting time led to trouble in two or three instances. The most serious trouble took place at the plant of the Grieb Rubber Co., where squads of police were ordered out as guards as the men left for their homes. Several companies met this situation by arranging eating and sleeping accommodations in their mills and housing the new men there."

At this writing this official states that the mills are being operated smoothly. The forces of workmen are not quite up to the normal, but he says the mills are all doing well and the strike is practically broken. A number of defections in the

ranks of the union men, it is claimed, have aided the manufacturers materially in keeping running.

James O'Donovan, a member of the local union and an international organizer, who is conducting the strike for the union, gives this account of the strike, from the standpoint of the union:

"The wages paid in the Trenton mills are less than those paid elsewhere. On December 4, 1903, the union made its first demand on the manufacturers. This included the recognition of the union and the adoption of the new wage scale, averaging about 8 per cent. increase; the adoption of the label was left optional. To this the union asked an answer on or before January 4. The manufacturers answered by posting notices in the mills to the effect that the 1903 wage scale would prevail during 1904. Then the union appointed a committee to visit the manufacturers to secure their ultimatum. The final word of the manufacturers was that the demand would not be granted. In order that all possible means might be tried to settle the matter amicably the union asked for a collective conference with the manufacturers on the question, which was ignored. Then nothing was left to the union but to strike. The night we voted to strike 471 members were present, out of a total membership of 621. Over 800 men went out when the strike was inaugurated and we have lost only seven men."

As soon as the strike was declared, headquarters were opened by the union, and have since been maintained. On the night of January 25, Samuel Gompers, president of the American Federation of Labor, came to Trenton and addressed the rubber workers. T. J. Edwards, of Boston, president of the Amalgamated Rubber Workers' Union has been here twice. Arrangements have been made by the union by which the married men among the strikers are paid \$7 per week and the single men \$4 per week. Many of the local unions in other trades have voted financial aid, and several benefit performances have been held.

It is now five weeks since the strike was declared. The manufacturers claim to have got into better shape with every week, and that there have been a number of defections from the strikers' ranks. The labor union claim, on the other hand, not to have lost strength, and that, with the support of sympathetic labor unions in other industries, they will be able to pay strike benefits indefinitely. It is known, however, that some of the strikers have left Trenton, to find work elsewhere. Some of the Trenton factories have been placed on the "unfair list," which means that a boycott has been ordered against their products.

All the rubber manufacturing companies hold membership in the recently formed Manufacturers' and Employers' Association, which includes representatives of practically every manufacturing industry in Trenton, besides many merchants who are large employers of labor. Richard C. Oliphant is president, Alfred Lawshe, vice president, and Lewis Lawton, treasurer. The affairs of the association will largely be directed by the executive committee, composed of the officers named and Charles H. Oakley, of the Grieb Rubber Co., Clifton Reeves, and Alfred K. Leuckel. Then there is an executive board composed of one representative from each industry included in the membership. The objects of the association are mutual protection in labor difficulties, and to act as a sort of general clearing house for hiring labor and other like matters.

THE balloting by bondholders of the Tehuantepec Rubber Culture Co., for an inspector from among their number to visit the plantation this year, resulted in the choice of Mr. Grosvenor Calkins, whose report will appear soon.

THE GREAT BALTIMORE FIRE.

THE city of Baltimore was visited on February 8-9 by one of the most disastrous fires that ever attacked an American city. In point of loss and destruction it was second only to the great Chicago conflagration of 1871. Beginning at 11 o'clock Sunday morning the flames raged for thirty-six hours, burning out thirty blocks and destroying nearly 1500 buildings. The total loss is estimated at something like \$70,000,000, with a loss falling on the insurance companies to the extent of \$50,000,000. Washington, Philadelphia and several small Pennsylvania cities sent engines to assist the Baltimore fire department on the first day of the fire but as more help was needed New York was appealed to and two special trains dispatched carrying ten engines and a hundred men. It was largely due to the excellent work of the New Yorkers that the fire was not more destructive.

The United States Rubber Co., at No. 102 Hopkins place, were in the line of progress of the flames, and at one time it seemed that the building would be completely destroyed. The direction of the progress of the fire was suddenly changed, however, and, while the building was seriously damaged on the outside, no harm was done to the contents. A new location, which may be regarded as permanent, has been secured immediately across the street, at No. 101 Hopkins place, where new offices have been fitted up and the stock of goods put in position.

The Baltimore branch of The Manhattan Rubber Manufacturing Co. (New York); at No. 23 South Charles street, was completely burned out, only their books and papers being saved. The loss amounted to about \$30,000, which is fully covered by insurance. A new location has been secured, at No. 200 South Charles street.

The Linthicum Rubber Co., wholesalers of rubber footwear, lost their immense warehouse at No. 25 Hanover street, with a stock of about \$225,000 worth of "Banigan" and "Woonasquatucket" boots and shoes. The company expect to have their warehouse rebuilt within six months, but in order to be able to serve their trade meanwhile, a warehouse has been leased at York, Pennsylvania, and another at No. 309 North Howard street, Baltimore, where the company's office will be located for the present. By March 1 the company expect to have a full new stock of goods, manufactured expressly for them. Their salesmen started out with full samples while the fire was still in progress.

George P. Thomas, Jr., at Baltimore and Charles streets, was burned out. He has secured a new location at No. 115 Sutton street for his wholesale business, at No. 220 North Howard street for retail trade, and at Hopkins place and Lombard street for offices. He writes: "This is a little mixed up, but it is the best we could do under the circumstances." Mr. Thomas handles rubber footwear and clothing and mechanical goods. On account of using the sign "Goodyear's Rubber House," it was generally reported that the Goodyear Rubber Co. had been burned out. The Goodyear Rubber Co., however, had no house in Baltimore, though Mr. Thomas handles some lines of their goods, as also do the Baltimore Rubber Co. and the Linthicum Rubber Co.

The Baltimore Rubber Co., No. 41 South Liberty street, were among the concerns burned out. A new location has been secured at No. 414 West Baltimore street, where business has been resumed. This house is the Baltimore branch of the New York Belting & Packing Co., Limited, and the Stoughton Rubber Co., and agents for the Fabric Fire Hose Co. and H. M. Sawyer & Sons—an oiled clothing firm. The Baltimore Rubber Co. have discontinued their rubber footwear department.

NEWS OF THE AMERICAN RUBBER TRADE.

PARAMOUNT RUBBER CO. CHANGES OWNERS.

THE Paramount Rubber Co. (Newark, New Jersey) has by unanimous vote of the stockholders gone into liquidation, and will cease to exist as a corporation. At a meeting of the directors held on January 22, this action was determined upon, and a meeting of stockholders called for March 4 to ratify the dissolution. As the directors and stockholders are identical, there will be no opposition. This factory has been exclusively employed making erasers, rubber bands, and other such goods for A. W. Faber, lead pencil manufacturers, and the members of that firm have from the beginning been interested in the plant. They have recently acquired all the stock, and this is the occasion for the dissolution of the corporation. William F. G. Geisse, manager of the Faber firm, stated to a representative of THE INDIA RUBBER WORLD that the business of the factory would be continued exactly as heretofore, with the exception that instead of being a corporation, it would be a portion of the firm of A. W. Faber (New York). "The same number of people will be employed, the same people, the same amount of goods will be made," said he. "We make at this factory all the rubber goods we use, whether in the domestic trade or for export."—The Paramount Rubber Co. was incorporated in New Jersey in 1898, and acquired the factory of L. Joy & Co. (Newark), where, for nearly 40 years, carriage cloth and rubber clothing were made. The Paramount company was organized with \$100,000 capital, with John M. Underwood, president; Otto Arendt, vice president and secretary; Frank Holt, treasurer; and James S. Brant, superintendent.

U. S. RUBBER RECLAIMING WORKS.

MR. FRANK W. BREWSTER will, on March 1, sever his connection with the Birmingham Iron Foundry (Derby, Connecticut) of which he has been mechanical engineer for a number of years, and on that date assume the position of general superintendent of the various plants of the U. S. Rubber Reclaiming Works, of New York, making his headquarters at Buffalo, New York. Mr. Brewster has been identified with the Birmingham Iron Foundry, as well as with rubber manufacturing for nearly 20 years. He is favorably known by practically all the rubber manufacturers in America, as well as abroad as one of the foremost mechanical engineers as pertaining to rubber machinery and rubber manufacturing in general, and he will be a great acquisition to the company. The business of the company has increased so rapidly that it is already taxing to the utmost the facilities of the new large mill at Buffalo, and it is understood to be the intention of the company as soon as weather conditions permit, to build large additions thereto, which will materially increase its output. We wish Mr. Brewster every success in his new departure.

FAILURE OF GEORGE W. BERRIAN.

GEORGE W. BERRIAN, dealer in rubber goods at No. 26 Cortlandt street, New York, filed a petition in bankruptcy on February 10, his liabilities being named as \$14,631 with nominal assets of \$3120. Mr. Berrian began in the rubber business May 1, 1895, as a partner in Camp & Berrian, at the corner of Nassau street and Maiden Lane, buying out his partner January 1, 1898. He gave up the store May 1, 1903, removing to the Cortlandt street address. Mr. Berrian was president of the K. B. M. Novelty Co., manufacturers of rubber goods at Newark, New Jersey, for which concern a receiver was appointed about

two months ago. Mr. Berrian owned 300 shares of stock in the concern and had a claim against it for \$2600 for money advanced. Francis H. Griffin, No. 41 Wall street, was appointed receiver to wind up Mr. Berrian's affairs. When seen by a representative of THE INDIA RUBBER WORLD, Mr. Griffin said that Mr. Berrian would engage in some other business hereafter. The former stand of Mr. Berrian was in the premises originally occupied by Daniel Hodgman, founder of the Hodgman Rubber Co.

INTERNATIONAL RUBBER MANUFACTURING CO.

NOTICE has been given to the creditors of this corporation, in bankruptcy, that the first meeting of its creditors will be held on March 14, at 2 P. M., at the office of Edwin A. S. Lewis, referee in bankruptcy, at No. 1 Newark street, Hoboken, New Jersey, when said creditors may attend, prove their claims, appoint a trustee, and transact such other business as may properly come before said meeting. The official notice states the amount of assets at \$152,079.78 and the liabilities at \$163,697.12.

EUREKA FIRE HOSE CO.'S DENVER BRANCH.

THE Eureka Fire Hose Co. (New York) have made arrangements with Mr. Julius Pearse, of Denver, to represent them exclusively in the sale of their rubber lined cotton fire hose, in the states of Colorado and Wyoming. Mr. Pearse has had large experience in fire department matters, having been chief of the Denver fire department for seventeen years. In making this connection the Eureka Fire Hose Co. adhere to their policy of having their selling department represented by men who are the best and most widely known in their respective territories, in the company's line of business. The office of Mr. Pearse is Room 9, Jacobson building, Denver, Colorado.

GEORGE WATKINSON & CO. (PHILADELPHIA.)

THE plans for the change of control of this business, referred to in the last INDIA RUBBER WORLD as having been acquired by interests allied to the United States Rubber Co., have not yet been fully consummated, but progress is being made. The entire stock of rubber boots and shoes, tennis goods, and wool boots, has been purchased by A. F. Cox & Son, Portland, Maine.

DELAWARE RUBBER CO. SOLD OUT.

ON February 17 there was a public sale of the effects of this company, a jobbing concern in the bicycle, tire, and rubber trade, at No. 631 Market street, Philadelphia, ordered by the receiver, Franklin Kessler. THE INDIA RUBBER WORLD'S Philadelphia correspondent reports that Mr. Kessler is not registered in the City Directory, and that he was unable to locate him. The sale took place as advertised, however, and comprised a number of water fountains, bicycles and parts, and rubber hose and mats. The major portion of the stock was purchased by the Manhattan Storage Co. of New York, for \$18,000. The latter concern, engaged in wholesaling and retailing bicycles, automobiles, and tires, will continue under their own firm name, the business of the Delaware Rubber Co. The Delaware company was composed of Jacob, Jesse, and Morris Froehlich, and had been in business for several years. Recently they made an offer to compromise with their creditors, which was not accepted. Their liabilities were reported at about \$55,000.

Allied with the Delaware company was the Froehlich Rubber Refining Co., incorporated June 9, 1903, with \$9000 capital. Morris Froehlich was president. A plant was operated at No. 3444 Trenton avenue, Philadelphia, making a rubber compound

and working it up into molded goods. An assignment was made on January 22 last to the Equitable Trust Co., by whose order the machinery and stock were sold on February 18. The sale included material in various stages of manufacture, horse-shoe pads, rubber quoits, etc., stamping and cutting machines, lathes, dies, and electrical plant. There were nearly a hundred buyers, and the sale netted about \$12,000.

CANADIAN WATERPROOF CLOTHING TRADE.

AN exceptionally rainy season in England has had the effect of taxing the capacity of the waterproof clothing factories in the Old Land with the result that export orders were not shipped with the promptness which usually distinguishes British business methods. So large were the orders that permission was sought to work overtime and during otherwise prohibited hours. Canadian factories have profited accordingly, and they all report prospects very bright.—*The Clothier and Haberdasher (Toronto)*.

REVERE RUBBER CO. EMPLOYEES' "SECOND ANNUAL."

A YEAR ago, in reporting a banquet given by the employees of the Revere Rubber Co. (Boston) in commemoration of the removal of the company to new offices, THE INDIA RUBBER WORLD mentioned that on account of the success of the affair it doubtless would become a regular institution. On the evening of January 29 the clerks and salesmen of the company had their "Second Annual," which proved equally enjoyable to those who participated. It was attended by forty persons, in the banquet hall of the Quincy House. No formal organization exists for the purpose of these dinners, there being no officers except a dinner committee. That responsible for arranging the recent dinner consisted of Charles A. Case, C. H. S. Wetmore, Edwin L. Stickney, Walter E. Belcher, James F. Sanborn, and William D. Jenkins. An elaborate menu was designed and provided by Mr. Case, and inside was tucked a leaflet containing a burlesque "Bill of Air," the very witty production of Mr. G. Arthur Gray. There were three formal toasts, responded to as follows: "The Home Office," by S. O. Barnard; "The Factory Office," by W. F. Jones and "The Boston Store," by G. C. Shirts. Mr. Gray was toast master. The rest of the speaking was informal. Music was provided by Astrella Brothers' orchestra and Mr. H. I. Belcher, vocalist, besides which there were performances by a prestidigitator and recitations by Mr. Joe Roth, in German dialect. The cover of the menu was embellished with a group of photographs of officials of the company, so good that we have pleasure in reproducing them in the accompanying plate.

The burlesque "bill of air (hot air)" embraced many items not generally served at "second" or any other "annual" dinners—"club footed parsnips," "hot and chilly sauce," "warm beans, cold beans, has beans," "beef hash—brush and comb served with every order," "roasted umpire, or fried with the batters," "cold shoulder, but not for our guests," "boneless ice cream," and the like. "Game—Canvas Back Duck, Burlap Back Duck, Other Ducks (30 and 32 ounce), Whist, Chess Pit." There were also hints for the diners, such as: "If oysters are ordered, guests will please do it quietly, as a noisy noise annoys an oyster." It is stated that "Board can be had by the weak as well as by the strong," and "our butter is union made; that is, where there is union there is strength."

RUBBER GOODS MANUFACTURING CO.

THE directors, at a meeting in New York on February 8, declared the twentieth regular quarterly dividend of 1½ per cent. on the preferred shares, out of earnings, payable March 15 to holders of record on March 5. Coupons will be mailed to registered addresses. The disbursement will be \$140,882.

"EUREKA" FIRE HOSE AT THE BALTIMORE FIRE.

THAT some of the glory that has come to Chief Howe and the nine fire engine companies who were sent by the mayor of New York to assist Baltimore in the recent great fire was due to the quality of the hose used by them, will not be questioned. When Chief Howe and his valiant fire fighters started for Baltimore they took with them about 10,000 feet of 2½ inch "Eureka" fire hose, which had just been delivered by the Eureka Fire Hose Co. to the city of New York under a contract which called for 20,000 feet 2½ inch hose, 1500 feet 3 inch, 4500 feet 1½ inch, and 250 feet 4 inch hose. Subsequently, on February 8, about 4 P. M., the Eureka Fire Hose Co. received a telegraphic communication through Mr. W. W. Atterbury, general manager of the Pennsylvania Railroad Co., at Philadelphia, from the Hon. Robert W. McLane, mayor of Baltimore, to ship as quickly as possible 20,000 feet 2½ inch fire hose, with Baltimore standard couplings attached, complete. The Penn-



J. S. PATERSON,
Assistant Superintendent.

E. S. WILLIAMS,
General Manager.

F. W. VEAZIE,
Superintendent.

HENRY C. MORSE, Treasurer.

J. H. LEARNED,
New England Sales Agent.

W. H. GLEASON,
Secretary.

REVERE RUBBER CO. OFFICIALS.

sylvania road offered every facility, shipping the hose on regular passenger trains without expense, and doing everything possible to expedite delivery. Notwithstanding that couplings had to be threaded especially, the Eureka company shipped 4000 feet on the night of February 8, keeping their factory open until midnight. On the morning of the 9th they shipped 3500 feet, with 5500 feet on February 11, and 7000 feet on February 13, practically completing the entire order within three days, and threading 400 sets of couplings specially to conform to Baltimore fire department requirements.

THE RELIABLE RUBBER CO.—A CORRECTION.

IN reporting the incorporation of this new rubber manufacturing concern, at Akron, Ohio, in the last INDIA RUBBER WORLD (page 175), the name was inadvertently printed "The Reliance Rubber Co." The latter name belongs to a new concern at Trenton, New Jersey.

"NO GREAT LOSS WITHOUT SOME SMALL GAIN."

EVEN the appalling fire which recently swept a large part of Baltimore out of existence will benefit some. The salvage companies, who salvage goods damaged by fire and sell them for the benefit of the fire insurance companies, will profit by this loss. The goods damaged must be carefully dried before they become salable, much depending upon the success of this drying. The Underwriters Salvage Co. of New York recently placed an order with the B. F. Sturtevant Co (Boston), for the complete equipment of a kiln for drying such goods by the Sturtevant fan system. The kiln is divided into small rooms of various widths served by overhead tracks from which are suspended frames for supporting two tiers of baskets for the reception of the water soaked material. These rooms are of fireproof construction and the size is governed by the material to be dried. Hot air is diffused through the rooms while the amount of air and its temperature is easily controlled. The drying is positive, economical and always independent of the weather. The kiln is not only equipped with the Sturtevant apparatus for drying, consisting of a Sturtevant steam fan connected to a Sturtevant fireproof heater and galvanized iron distributing pipes, but the entire material and workmanship for making the rooms fireproof was furnished by the B. F. Sturtevant Co.

TRENTON NOTES.

THE taking of testimony in the application of the Eureka Fire Hose Co., of Jersey City, for an order restraining the Eureka Rubber Manufacturing Co., of Trenton, from using the word "Eureka" as a trade mark upon goods it manufactures was resumed before Vice-Chancellor John R. Emory, in Newark, on February 24. The hearing in this case was begun before the vice-chancellor on December 21, and on December 24 was adjourned until the February date. Former Judge Gilbert Collins, Krouse & Perkins, and R. V. Lindabury represented the plaintiffs, and the defendants were represented by former Judge William M. Lanning and J. V. B. Wicoff. The questions at issue have already been stated in THE INDIA RUBBER WORLD.

=The Farrier Hoof Pad Co. applied to the court of chancery on February 19 for an injunction to restrain Albert E. Wheatcroft from assigning or in any manner disposing of an invention in hoofpads. The Farrier Hoof Pad Co. was organized in the fall of 1902 for the purpose of manufacturing hoofpads according to letters patent No. 682,302, issued to Wheatcroft. A plant was established at the works of the Trenton Rubber Manufacturing Co., and it is claimed that an agreement was made with Wheatcroft by which he was to assign to the company an undivided one-half interest in the patent and any other patent that might be issued to him. Then Wheatcroft was to receive

21 shares of stock and was to be employed as agent of the company on a salary. The bill alleges that Wheatcroft is about to enter the employ of a concern making hoofpads of a different kind, and that he refuses to execute an assignment of his invention to the plaintiff company.

=George Ashmore, 49 years old, was injured in an accident at the Home Rubber Co.'s factory on February 11. He was mixing packing at a mill when his arm was caught in the rolls and the limb was drawn into the mill to the shoulder before the machinery could be stopped. His arm was mashed to a pulp, his neck and shoulder gouged and his back broken. He was taken to McKinley Hospital where his arm was amputated. Then the broken piece of the vertebrae was removed and the spinal column fastened together with a silver wire. Ashmore died in the hospital two days later. He had been employed in the factory for 15 years.

NEW INCORPORATIONS.

THE Vehicle Apron and Hood Co. (Columbus, Ohio), January 13, 1904, under Ohio laws; capital, \$100,000; to manufacture and sell rubber curtains, storm fronts for carriages, etc. Incorporators: John P. Gordon, J. E. Jones, F. O. Henson, C. A. Charles, E. M. DuBois. The business has been in existence since March, 1901, and the products have been mentioned before in these pages.

=American Pneumatic Cushion Co., January 29, 1904, under New York laws, to manufacture pneumatic rubber cushions; capital, \$5000. Directors: C. B. F. Benton, East Orange, New Jersey; T. L. Buck, Brooklyn, N. Y.; H. Hoelger, New York city. THE INDIA RUBBER WORLD is informed that the company are not yet prepared to make any statement for publication.

=The Canton Waterproof Clothing Co., January 19, 1904, under Ohio laws; capital authorized, \$10,000. Incorporators: E. G. Howe, Joe Klosterman, R. E. Working, Ed. L. Smith, George W. Butler. Mr. Howe, the manager, reports: "We manufacture coats from rubberized cloth of different grades; also rubber sleeve protectors. We also make a large line of canvas waterproof suits, using an oil interlining. We also intend to manufacture several other kinds of rubber goods as soon as we can complete arrangements to do so."

TRADE NEWS NOTES.

THE Chicago Rubber Brokerage Co. have opened an office at No. 154 Lake street, Chicago, for the handling of all kinds of manufactured rubber goods, representing several factories. The manager is J. Hurd Thompson, formerly of the rubber trade in Omaha, Nebraska, and who for several years past has been traveling in the middle west, selling mechanical rubber goods. The new house does not carry any stock at present, but probably will do so later on.

=The Boston Woven Hose and Rubber Co., on Monday, February 8—the day following the outbreak of the great fire in Baltimore, and while the fire was still raging—received an order by long distance telephone for 20,000 feet of fire department hose for prompt shipment to that city. This order was of interest for its size, as well as for the promptness with which the Baltimore officials acted.

=The G & J Tire Co. (Indianapolis, Indiana) have received an order for 3600 pairs of bicycle tires, for use in the Japanese military service. The company inform THE INDIA RUBBER WORLD that the Japanese government are building their own bicycles, and using the "G & J" tires as their equipment.

=George Peckham, a capitalist of Springfield, Ohio, has been elected president of the Victor Rubber Co., of that city, with a factory at Snyderville, Ohio, and it is understood that he

has purchased the interest of John S. Harshman, the retiring president, and that the present capital of \$100,000 is to be largely increased.

=A meeting of the stockholders of the Goshen Rubber Works (Goshen, Indiana), several of whom live at a distance, was held at that place on February 17, and it is reported that the object of the meeting was to plan an important increase of the plant.

=The New York-Broadway Rubber Tire Co. (distributors in the New York territory for the tires of the Goodyear Tire and Rubber Co.) have leased for three years the three story building, No. 253 West Forty-seventh street, New York.

=The Joseph Banigan Rubber Co., of Providence, Rhode Island, with \$1,500,000 capital, have formed a corporation in Illinois, to cover their business in that state, with \$175,000 capital.

=President Lewis D. Parker, of the Hartford Rubber Works Co., during the month made a business trip to the Pacific coast.

=The Singer Manufacturing Co., on account of the great fire in Baltimore, which burned out their manufacturing department, have secured a temporary location at No. 11 South Eutaw street, in that city.

=Notwithstanding the strike in the rubber industry prevailing in their town, The Eureka Rubber Manufacturing Co. of Trenton, N. J., do not seem to be much affected. Their January shipments were the largest since they began business, and included a carload of steam hose, suction hose, sheet packing, and other high grade goods for the United States government; a carload of garden hose; and a carload of fruit jar rings.

PERSONAL MENTION.

MR. HENRY C. PEARSON, Editor of THE INDIA RUBBER WORLD, has returned from a trip around the world, in the interest of this Journal, involving an absence of several months, during which time he made a careful study of the important work in rubber planting in progress in the Far East, the results of which will be reported in our forthcoming issues.

=Mr. George A. Lewis, president of the Beacon Falls Rubber Shoe Co., is spending a few weeks at Aiken, South Carolina.

=Mr. Charles H. Dale, president of the Rubber Goods Manufacturing Co. has been taking his annual vacation at Palm Beach, Florida.

=Frederick W. Peck, a well known citizen of Chelsea, Massachusetts, died on February 17, aged about 54 years. For several years he had been engaged in handling scrap rubber.

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED States Rubber Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Jan. 23	5,985	13 $\frac{3}{4}$	12 $\frac{1}{2}$	6,010	50 $\frac{3}{4}$	43 $\frac{1}{4}$
Week ending Jan. 30	8,260	14 $\frac{3}{4}$	13	5,365	54 $\frac{1}{2}$	50 $\frac{1}{2}$
Week ending Feb. 6	2,110	13 $\frac{3}{4}$	10 $\frac{1}{2}$	1,745	52	45 $\frac{1}{2}$
Week ending Feb. 13	860	11 $\frac{3}{4}$	10 $\frac{1}{2}$	1,300	49	46
Week ending Feb. 20	570	12 $\frac{1}{2}$	11 $\frac{3}{4}$	820	48 $\frac{1}{4}$	47 $\frac{1}{4}$
Week ending Feb. 27	150	12	12	860	47 $\frac{3}{4}$	46

RUBBER Goods Manufacturing Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Jan. 23	18,380	21 $\frac{3}{4}$	18 $\frac{1}{4}$	2,366	79 $\frac{3}{4}$	75
Week ending Jan. 30	11,850	22 $\frac{1}{4}$	20 $\frac{1}{2}$	587	79 $\frac{3}{4}$	78 $\frac{1}{2}$
Week ending Feb. 6	4,680	21	18 $\frac{3}{4}$	30	75	75
Week ending Feb. 13	1,810	19 $\frac{1}{2}$	18 $\frac{1}{2}$	310	78	78
Week ending Feb. 20	2,300	20 $\frac{3}{4}$	19 $\frac{1}{4}$	....	....	....
Week ending Feb. 27	1,910	19 $\frac{3}{4}$	18 $\frac{3}{4}$	42	79 $\frac{1}{2}$	78

THE PARA RUBBER PLANTATION CO.

THERE exists at Ciudad Bolivar, in Venezuela, a daily journal, printed in Spanish, under the title *El Anunciador*, whereof we have received the issue dated January 9, 1904. Not the least interesting feature of that particular journal appears beneath the heading "Caucho"—the Spanish word for India-rubber—and that our readers may have the benefit of it, a translation of the article is given below. It may be added that THE INDIA RUBBER WORLD had not before seen or heard of this letter, and that it possesses no knowledge of the person whose name is signed to the letter:

SAN CARLOS DE RIO NEGRO, December 2, 1903.

TO THE EDITOR OF THE INDIA RUBBER WORLD, New York—*Dear Sir*: I have just read in the last issue of your esteemed review an article entitled "How 'the Para Rubber Plantation Co.' Works," and, bearing in mind what is stated in that article, I hasten to furnish you the following data:

First. Up to the present time that company has done no work, and it does not possess a single kilogram of Caoutchouc in the regions of the Casiquiare or anywhere else in this country. Those 300,000 pounds spoken of, exist only in the imagination of the company.

Second. The alleged transfer of a perpetual lease made to the Para Rubber Plantation Co., is obscure, dishonest, and, besides, it is entirely null and void according to the constitution and laws of Venezuela. These entangled transactions will cause the stockholders of the company serious trouble.

Third. The invalidity I refer to will be brought before the proper authorities in a short time, and these authorities will order its abrogation, because, under the law in force, lands exceeding 500 hectares cannot be sold, and in accordance with the statement of the company, it appears that the company has bought 900,000 hectares!

Fourth. The Para Rubber Plantation Co. does not possess, and it has not bought from anyone in this locality, any properties whatever, of any kind, and no one here is acquainted with any of the gentlemen forming such a company.

Fifth. The reports given by Dr. Lucien Morisse are not only exaggerated in regard to the production of Caoutchouc, but such information has already been refuted by a Venezuelan writer, who formerly resided here.

If you wish me to furnish you with further particulars, please write me at Ciudad Bolivar (Venezuela). Respectfully yours,

RICARDO BUENO CAMICO.

The above letter in *El Anunciador* is followed by a reproduction, in Spanish, of the article in THE INDIA RUBBER WORLD of October 1, 1903 (page 19)—"How the 'Para Rubber Plantation Co.' Works"—to which the letter refers. THE INDIA RUBBER WORLD has also received a pamphlet printed at Caracas, entitled "El Caucho en Venezuela," by B. Tavera Acosta, which is devoted to a refutation of the statements made by Dr. Lucien Morisse regarding rubber on the Casiquiare, and which serve as the basis of the printed prospectus of the Para Rubber Plantation Co. Señor Tavera-Acosta, by the way, is the Venezuelan writer mentioned in the above communication, and his pamphlet in reply to Morisse will have further attention in these pages.

RUBBER SHOES IN AUSTRALIA.—The Canadian Commercial Agent at Sydney, New South Wales, reports [November 9, 1903]: "Canada has done a good trade in rubber shoes, but the Canadian prices have recently been raised and properly so, I think, but the consequence is that a Russian manufacturer has accepted the orders at the old price and has obtained the business for this season. Whether the goods will be equal in quality to the Canadian product is yet to be determined." Russian shoes have not been offered in Australia hitherto,

REVIEW OF THE CRUDE RUBBER MARKET.

THE prices of rubber maintained an almost continuous high figure during February, and at the close were from 2 to 4 cents above the corresponding period in January.

The prices advanced during the first week of the month until Upriver Pará was quoted at about 1.05 @ 1.06, and then there was less activity and prices sagged until about the 19th instant, when the same grades were purchasable at 98 @ 99. Immediately after the Antwerp auction, however, which was February 24, all prices took a sharp upward turn, and at the close 1.06 @ 1.07 were ruling quotations for fine new Upriver Pará, with little or no rubber in the market for sale. Islands rubber closed at about 1.03.

This strong ending was in spite of the fact that the receipts during the month were unusually large. These increased receipts, however, have not apparently increased visible supplies to any degree, for on the last day of the month it was asserted that only scattering and small lots of Pará could be obtained, and the large importers were taking no orders except from customers with whom they had contracts. The immense amount of rubber taken by manufacturers was largely on account of extensive purchases by the United States Rubber Co., and some buying by the Rubber Goods Manufacturing Co. There is practically no old rubber in the market. It is not believed that the stocks of the manufacturers, as a rule, are large.

At the Antwerp sales of Africans, on February 24, prices were on an average of 3 to 4 cents higher than they were last month. There were offered only 370 tons as against 684 tons in January, and the bidding was very active. Almost the entire offering was taken by the Europeans, the American idea of prices for the most part, being too low. Lopori ball prime sold 93 @ 94, and other grades proportionately high.

The arrivals at Manáos, now the most important prime market for Pará grades, as shown in detail further along in this report, are measurably larger than last year, though about the same as in the year before that. The smaller receipts at Manáos in the intermediate year were due to the disturbances on the Acre which put a check to shipments from that region. The arrivals at Pará thus far this season (including Caucho) have been, in tons:

	1900-01.	1901-02.	1902-03.	1903-04.
To January 31.....	13,740	16,490	14,650	17,720
" February 28....	16,030	19,870	19,410	20,320

[a—To February 18, 1904.]

Reports have been current of purchases on the Amazon, by a European house, amounting to 1500 tons in January—an amount presumably in excess of any normal demand from their customers. On the other hand, a circular has been received on this side of the Atlantic from an English firm, attributing the rise in rubber to unusually large purchases by an American house, with a view to preventing the heavy receipts at Pará from leading to a decline in prices. Such conflicting reports usually prevail on the two sides of the Atlantic, and the problem of what really makes the price of Pará rubber continues unsolved. On this subject, however, the following statement, by a New York rubber merchant, may be quoted:

"Rubber is now selling at Pará at a price equal practically to the ruling quotations at New York. To move it here would involve the cost of freight and insurance, and the shrinkage in weight of rubber. Yet rubber is being offered here for future delivery at a very slight advance over spot rates, which means that the sellers stand to lose in the event of high prices being

maintained. And herein is an explanation of the extreme high prices of last September. There was a very large 'short' interest at the time, and visible supplies declined to an unusually low figure. The result was that when sellers on contracts came to make deliveries, the supplies were so closely controlled as to force them to pay roundly for the rubber they required."

Which would indicate that, if rubber prices at any time are a result of speculative movements, it may be due to efforts to depress the market as well as to bring about an advance unwarranted by the statistical position.

Following is a statement of prices of Pará grades, one year ago, one month ago, and on February 29—the current date:

PARA.	Mar. 1, '03.	Feb. 1, '04.	Feb. 29
Islands, fine, new.....	84@85	99@100	102@103
Islands, fine, old.....	90@91	@	@
Upriver, fine, new.....	89@90	104@105	106@107
Upriver, fine, old.....	94@95	None here	108@109
Islands, coarse, new.....	52@53	64@ 65	66@ 67
Islands, coarse, old.....	@	None here	None here
Upriver, coarse, new.....	72@73	83@ 84	83@ 84
Upriver, coarse, old.....	@	85@ 86	85@ 86
Caucho (Peruvian) sheet.....	53@54	64@ 65	66@ 67
Caucho (Peruvian) ball.....	65@66	75@ 76	76@ 77

The market for other sorts in New York on which the advance has also been very material, is as follows:

AFRICAN.	CENTRALS.
Sierra Leone, 1st quality 92 @93	Esmeralda, sausage... 75 @76
Massai, red..... 92 @93	Guayaquil, strip..... 67 @68
Benguella..... 74 @75	Nicaragua, scrap... 74 @75
Cameroun ball..... 66 @67	Panama, slab..... 57 @58
Accra flake..... 36 @37	Mexican, scrap..... 73 @74
Accra buttons..... None here	Mexican, slab..... 54 @55
Lopori ball, prime... 94 @95	Mangabeira, sheet... 57 @58
Lopori strip, prime... 85 @86	EAST INDIAN.
Ikelemba..... 94 @95	Assam..... 81 @82
Madagascar, pinky... 84 @85	Borneo..... @

Late Pará cables quote:

	Per Kilo.	Per Kilo.
Islands, fine.....	62 1/2	Upriver, fine..... 7 3/4
Islands, coarse.....	3 5/8	Upriver, coarse..... 5 3/4

Exchange, 12 1/2 d.

Last Manáos advices:

Upriver, fine.....	7 3/4	Upriver, coarse.....	5 1/2
--------------------	-------	----------------------	-------

Exchange, 12 1/2 d.

NEW YORK RUBBER PRICES FOR JANUARY (NEW RUBBER).

	1904.	1903.	1902.
Upriver, fine.....	94@105	86@92	77@86
Upriver, coarse.....	77@ 83	71@76	62@65
Islands, fine.....	90@102	84@89	75@81
Islands, coarse.....	56@ 65	53@62	47@52
Cametá, coarse.....	55@ 64	55@64	50@52 1/2

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for car-load lots—in cents per pound; again no change of importance to be noted:

Old Rubber Boots and Shoes—Domestic.....	6 1/2 @ 7
Do —Foreign.....	6 1/4 @ 6 3/4
Pneumatic Bicycle Tires.....	4 @ 4 1/2
Solid Rubber Wagon and Carriage Tires.....	7
White Trimmed Rubber.....	8 3/4 @ 9
Heavy Black Rubber.....	4 1/4
Air Brake Hose.....	2 1/2 @ 2 3/4
Fire and Large Hose.....	2
Garden Hose.....	1 1/2
Matting.....	1

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.					
	Fine and Medium.	Coarse.	Total 1904.	Total 1903.	Total 1902.
Stocks, January 1.....tons	56	0 =	56	72	1139
Arrivals, January.....	948	470 =	1418	1624	1330
Aggregating.....	1004	470 =	1474	1696	2469
Deliveries, January.....	941	469 =	1410	1443	1130
Stocks, January 31....	63	1 =	64	253	1339

PARÁ.			ENGLAND.		
	1904.	1903.		1904.	1903.
Stocks, Jan. 1.....tons	370	365	150	545	885
Arrivals, January....	3760	2500	3825	1145	1190
Aggregating.....	4130	2865	3975	1690	2075
Deliveries, January...	3565	2710	3465	1100	1025
Stocks, Jan. 31....	565	155	510	500	1050

	1904.	1903.	1902.
World's visible supply, January 31.....tons	3717	2783	5329
Para receipts, July 1 to January 31.....	16,235	13,846	16,079
Para receipts of Caucho, same dates.....	1519	924	1381
Afloat from Para to United States, Jan. 31..	1478	740	930
Afloat from Para to Europe, January 31.....	1020	585	1320

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: At the first large sale of the year, on January 29, when about 715 tons of rubber were offered and 687 tons found buyers, the prices averaged about 6½ per cent. higher than at the large sale in December. Some sorts as Lopori and Aruwimi advanced as much as 8@10 per cent. Considerable of the buying was attributed to the United States. The principal lots realized prices as follows:

	Estimation.	Sold at.
31 tons Lopori I.....	francs 9.10	9.92½
26 " Lopori II.....	7.	8.
72 " Uelé Strips.....	8.50	9.05
22 " Aruwimi Strips.....	8.15	9.
24 " Mongalla strips.....	9.15	9.75
24 " Batouri.....	8.65	9.12½
20 " Upper Congo Red.....	9.45	10.05
45 " Upper Congo ordinary.....	10.02½	9.40

At a small sale of 21 tons on February 5 prices were practically unchanged. At the next regular monthly sale, on February 26, about 370 tons of Congo sorts will be offered.

C. SCHMID & CO., SUCCESEURS.

Antwerp, February 17, 1904.

ANTWERP RUBBER STATISTICS FOR JANUARY.

DETAILS.	1904.	1903.	1902.	1901.	1900.
Stocks, Jan. 1.....kilos	610,900	658,105	414,709	614,039	291,991
Arrivals in January..	522,259	171,860	636,243	543,626	475,880
Congo sorts	385,781	136,541	613,876	443,073	430,996
Other sorts	136,478	35,319	22,367	100,553	44,884
Aggregating.....	1,133,159	829,965	1,050,952	1,157,665	767,871
Sales in January.....	706,994	695,830	407,253	509,034	225,773
Stocks, Jan. 31 ..	426,165	134,135	643,699	648,631	542,098
Arrivals since Jan. 1	522,259	171,860	636,243	543,626	475,880
Congo sorts	385,781	136,541	613,876	443,073	430,996
Other sorts	136,478	35,319	22,367	100,553	44,884
Sales since Jan. 1...	706,994	695,830	407,253	509,034	225,773

RUBBER ARRIVALS AT ANTWERP.

FEB. 9.—By the *Philippville*, from the Congo:

Bunge & Co.....(Société Générale Africaine) kilos	103,000
Do	33,000
Do	1,300
Société A B I R.....	96,500
Société Equatoriale Congolaise.....(Société L'Ikelemba)	1,800
Comptoir Commercial Congolais.....	6,000

Charles Dethier....	(La Haut Sangha)	16,900
Do	(La M'Poko)	5,000
Comptoir des Produits Coloniaux.....		
Do	(Messageries fluviales du Sénégal)	6,600
Do	(Renard)	3,000
Société Coloniale Anversoise.....(Belge du Haut Congo)		12,600
Do	(Cle. de Lomami)	6,500
L. & V. Van de Velde.....	(Cle. du Kasai)	67,000
W. Mallinckrodt & Co.....	(Alimaienne)	2,000
Comptoir Commercial Anversois.....		600
M. S. Cols.....	(Société Banlieue)	700
Do	(Alima)	3,800 366,300

Liverpool.

EDMUND SCHLÜTER & Co. report that the statistical position would hardly appear to justify the quick advance in rubber which has been maintained during the month. Yet, taking into consideration the small increase in the visible supply of Para sorts, after the large receipts since January 1, and the small estimates of receipts during the remaining months of the season, the higher prices, with fluctuations, have probably come to stay. Their circular embraces the following statistics:

Para receipts in January, 1904, were.....	4,250 tons
" " " " 1903, "	2,490 "
Increase in 1904.....	1,760 "
Para receipts in July-January, 1903-04, were	17,830 "
" " " " 1902-03, "	14,740 "
Increase in 1903-4.....	3,090 "

The visible supply on January 31 was:

	1901.	1902.	1903.	1904.
Tons.....	3896	5272	3008	4342

WILLIAM WRIGHT & Co. report [February 1]:

Fine Para.—The market has been exceedingly active, prices having advanced 4d. per pound. In spite of the fact that crop receipts are 2930 tons, or about 20 per cent. in excess of last season, the demand in Para has been exceptionally strong, all supplies being eagerly competed for at advancing rates. We cannot help thinking that a good deal of the advance has been owing to the necessity to cover forward sales. Undoubtedly the demand is very good, but at this stage of the crop we think an advance of 4d. per pound is not justified, the market closing very firm with sellers firm at 4s. 4d. Stocks are small and well held. Forward: a good business done at advancing rates closing with no sellers under 4s. 4d.

Africans have been in active request and a large business done at advancing rates. Sierra Leone has advanced from 3s. 5¼d. @ 3s. 8½d.; Cape Coast lump 1s. 11¼d. @ 2s. 2d.; Cameroon 2s. 6d. @ 2s. 7d., and other grades in proportion.

On account of advancing years Edward Till has retired from the firm of Edward Till & Co, brokers, Mincing lane, London, which in future will be continued under the same style by Geoffrey Hoare and Charles Bower.

Bordeaux.

PRICES FEBRUARY 15—FRANCS PER KILO.

Conakry niggers...	10 30@10.45	Tamatave.....	8.25@ 8.60
Soudan twists.....	8.75@ 9.40	Majunga.....	7. @ 7.60
Soudan niggers	9.80@10.	Niggers.....	4.50@ 5.25
Cassamance, A.....	7.50@ 7.55	Lahou cakes	7.50@ 8.20
Cassamance, A. M..	6.75@ 6.85	Lahou lumps.....	5.60@ 6.25
Cassamance, B.....	5.85@ 5.95	Mexican scraps	8.50@ 9.
Madagascar:		Mexican slabs... ..	7.50@ 8.50

Ceylon Rubber Exports.

FOR THE CALENDAR YEAR 1903.

To Great Britain.....	pounds 39,456
" Germany.....	1,672
" Belgium.....	156
" United States.....	400
Total, 1903.....	pounds 41,684
Total, 1902.....	21,168
Total, 1901.....	7,392

Rubber Receipts at Manaos.

DURING January and the first seven months of the crop season for three years [courtesy of Messrs. Witt & Co.]:

From—	JANUARY.			JULY-JANUARY.		
	1904.	1903.	1902.	1904.	1903.	1902.
Rio Parás—Acre..... tons	1650	720	1556	3851	2635	3895
Rio Madeira.....	247	178	250	1791	1478	1860
Rio Jurua.....	675	1226	747	2110	2015	2340
Rio Javary—Iquitos.....	344	257	87	1789	1253	972
Rio Solimões.....	104	154	227	570	1076	1274
Rio Negro.....	113	126	92	267	325	187
Total.....	3133	2661	2959	10,378	8781	10,528
Caucho.....	712	596	517	1612	1196	1613
Total.....	3845	3257	3476	11,990	9977	12,141

Gutta-Percha.

WEISS & Co. (Rotterdam) report exports from Singapore for the five last calendar years as follows:

	1899.	1900.	1901.	1902.	1903.
Tons.....	7280	6158	5590	4236	3286

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

February 1.—By the steamer <i>Basil</i> , from Manáos and Pará:					
IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
Poel & Arnold.....	269,100	72,100	127,800	22,300	491,300
United States Rubber Co.	329,900	65,400	127,800	46,700	569,800

PARA RUBBER VIA EUROPE.

JAN. 28.—By the <i>Majestic</i> =Liverpool:		POUNDS.
William Wright & Co. (Fine).....	11,700	
William Wright & Co. (Coarse).....	11,200	22,900
FEB. 1.—By the <i>Etruria</i> =Liverpool:		
A. T. Morse & Co. (Fine).....		14,700
FEB. 5.—By the <i>Trinidad</i> =Antwerp:		
A. T. Morse & Co. (Fine).....		9,600
FEB. 5.—By the <i>Trinidad</i> =Antwerp:		
A. T. Morse & Co. (Fine).....		12,500
FEB. 8.—By the <i>Umbria</i> =Liverpool:		
Poel & Arnold (Caucho).....		6,500
FEB. 13.—By the <i>Victoria</i> =Liverpool:		
A. T. Morse & Co. (Fine).....		22,500
FEB. 13.—By the <i>Pennsylvania</i> =Hamburg:		
Poel & Arnold (Fine).....	18,000	
Poel & Arnold.....	4,500	22,500
FEB. 13.—By the <i>Celtic</i> =Liverpool:		
A. T. Morse & Co. (Fine).....	55,000	
George A. Alden & Co. (Fine).....	20,000	75,000
FEB. 15.—By the <i>La Bretagne</i> =Havre:		
United States Rubber Co. (Fine).....	22,000	
Poel & Arnold (Fine).....	9,000	31,000
FEB. 15.—By the <i>St. Paul</i> =London:		
United States Rubber Co. (Coarse).....		35,000
FEB. 16.—By the <i>Invernia</i> =Liverpool:		
George A. Alden & Co. (Fine).....	60,000	
Poel & Arnold (Fine).....	80,000	
Poel & Arnold (Coarse).....	16,000	
A. T. Morse & Co. (Fine).....	17,000	173,000
FEB. 20.—By the <i>Cedric</i> =Liverpool:		
George A. Alden & Co. (Fine).....		22,000

OTHER ARRIVALS AT NEW YORK

CENTRALS.		POUNDS.
JAN. 25.—By the <i>Vigilancia</i> =Mexico:		
H. Marquardt & Co.....	2,700	
Thebaud Brothers.....	1,500	
Harburger & Stack.....	1,580	
E. Steiger & Co.....	1,000	
American Trading Co.....	500	
For Hamburg.....	5,000	12,200
JAN. 26.—By the <i>Valencia</i> =Cartagena:		
Kunhardt & Co.....	2,500	
Isaac Kubie & Co.....	1,500	
A. D. Straus & Co.....	300	
Pedro A. Lopez.....	290	4,590
JAN. 26.—By the <i>Alliance</i> =Colon:		
Meyer Hecht.....		5,300

New York Commercial Co.	135,000	24,200	43,700	.....=	202,900
A. T. Morse & Co.....	57,900	15,500	66,700	3,000=	143,100
William Wright & Co.....	21,600	1,100	19,500	.....=	42,200
Lionel Hagenaers & Co.....	10,200	.....	6,600	.....=	16,800
Hagemeyer & Brunn.....	5,700	2,400	900	.....=	9,000
Total.....	829,400	180,700	393,000	72,000=	1,475,100

February 13.—By the steamer *Hilary*, from Manáos and Pará:

United States Rubber Co.	359,700	70,300	134,100	8,500=	572,600
Poel & Arnold.....	272,800	100,300	109,300	14,600=	497,000
A. T. Morse & Co.....	174,900	30,200	86,000	80,000=	371,100
New York Commercial Co.	114,400	25,600	86,100	2,900=	229,000
William Wright & Co.....	22,000	1,900	34,500	.....=	58,400
Hagemeyer & Brunn.....	5,700	2,400	900	10,500=	19,500
Lionel Hagenaers & Co.....	8,700	.....	4,000	.....=	12,700
Thomsen & Co.....	900	.....	3,900	.....=	4,800
Total.....	959,100	230,700	458,800	116,500=	1,765,100

February 23.—By the steamer *Cametense*, from Manáos and Pará:

Poel & Arnold.....	385,400	117,100	173,400	101,600=	777,500
A. T. Morse & Co.....	295,500	51,400	171,900	54,900=	573,700
New York Commercial Co.	338,800	66,300	140,800	1,100=	547,000
United States Rubber Co.	125,100	24,100	83,200	42,600=	275,000
Lionel Hagenaers & Co.....	9,200	.....	7,100	.....=	16,300
Hagemeyer & Brunn.....	2,400	700	600	10,800=	14,500
William Wright & Co.....	.....	.....	12,000	.....=	12,000
Total.....	1,156,400	259,600	589,000	211,000=	2,216,000

[NOTE.—The steamer *Bernard* from Pará due at New York on March 6, has on board 940 tons of Rubber and 25 tons of Caucho.]

CENTRALS—Continued.

Fidanque Bros. & Co.....	1,000	
E. B. Strout.....	1,400	
W. Loaliza & Co.....	1,000	
Eggers & Heinlein.....	1,100	
Gillespie Bros. & Co.....	400	
Isaac Brandon & Bros.....	400	10,600
JAN. 26.—By the <i>Saxonia</i> =Liverpool:		
Poel & Arnold.....		3,300
JAN. 27.—By the <i>Tennison</i> =Bahia:		
Hirsch & Kaiser.....	16,000	
J. H. Rossbach & Bros.....	13,300	29,300
FEB. 1.—By the <i>El Sud</i> =New Orleans:		
A. T. Morse & Co.....	16,000	
Manhattan Rubber Mfg. Co.....	6,500	22,500
FEB. 1.—By the <i>Etruria</i> =Liverpool:		
Poel & Arnold.....	11,000	
Eggers & Heinlein.....	3,300	14,300
FEB. 2.—By the <i>Yucatan</i> =Colon:		
Hirzel, Feltman & Co.....	19,700	
G. Amsinck & Co.....	7,700	
A. Santos & Co.....	7,200	
Livingstone & Co.....	5,100	
Meyer Hecht.....	4,400	
American Trading Co.....	2,800	
Harburger & Stack.....	3,000	
H. Marquardt & Co.....	2,000	
Dumarest & Co.....	3,500	
Roldan & Van Sickle.....	3,700	
Lawrence Johnson & Co.....	2,400	
Silva Bussenius & Co.....	2,000	
Rosenthal Sons & Co.....	1,800	
A. M. Capen's Sons.....	1,400	
R. G. Barthold.....	1,100	
Mecke & Co.....	800	
Isaac Brandon & Bros.....	500	
Kunhardt & Co.....	300	69,100
FEB. 3.—By the <i>Terence</i> =Bahia:		
J. H. Rossbach & Bros.....		19,500
FEB. 3.—By the <i>Altai</i> =Greytown, etc:		
G. Amsinck & Co.....	4,500	
E. B. Strout.....	1,500	
Andreas & Co.....	600	
Graham, Hinkley & Co.....	600	
Isaac Brandon & Bros.....	400	
D. A. Delima & Co.....	1,000	8,600
FEB. 4.—By the <i>El Alba</i> =New Orleans:		
A. T. Morse & Co.....	4,500	
Manhattan Rubber Mfg. Co.....	2,000	
A. N. Rotholz.....	4,000	10,500
FEB. 6.—By the <i>Esperanza</i> =Mexico:		
E. Steiger & Co.....	1,600	
H. Marquardt & Co.....	800	
Samuels & Cummings.....	500	
For Hamburg.....	4,000	
San Joseph Iron Co.....	2,500	9,300
FEB. 8.—By the <i>Umbria</i> =Liverpool:		
George A. Alden & Co.....	18,500	
Poel & Arnold.....	2,200	20,700

CENTRALS—Continued.

FEB. 8.—By the <i>Comus</i> =New Orleans:		
A. T. Morse & Co.....		4,000
FEB. 9.—By the <i>City of Washington</i> =Colon:		
Meyer Hecht.....		3,700
Isaac Brandon & Bros.....		3,400
Piza Nephews & Co.....		2,000
G. Amsinck & Co.....		1,400
L. N. Chemedlin & Co.....		900
Jimenez & Escobar.....		400
John Boyd, Jr. & Co.....		200
Barling & De Leon.....		210
FEB. 13.—By the <i>Pennsylvania</i> =Hamburg:		
Poel & Arnold.....		24,000
FEB. 13.—By the <i>Celtic</i> =Liverpool:		
George A. Alden & Co.....	26,600	
Poel & Arnold.....	17,000	43,600
FEB. 13.—By the <i>El Mar</i> =New Orleans:		
A. T. Morse & Co.....	3,000	
Eggers & Heinlein.....	2,000	5,000
FEB. 18.—By the <i>Siberia</i> =Cartagena, etc.:		
Guteman, Rosenfeld & Co.....	1,500	
Jimenez & Escobar.....	1,500	
Joaquin Ferro.....	1,100	
G. Amsinck & Co.....	1,000	
Andreas & Co.....	500	
Isaac Brandon & Bros.....	500	
Graham, Hinkley & Co.....	400	
For Europe.....	3,800	10,000
FEB. 17.—By the <i>Seguranca</i> =Colon:		
Hirzel, Feltman & Co.....	21,300	
G. Amsinck & Co.....	7,300	
George A. Alden & Co.....	6,000	
American Trading Co.....	3,700	
Lawrence Johnson & Co.....	2,800	
A. Santos & Co.....	2,500	
Dumarest & Co.....	1,800	
Meyer Hecht.....	1,300	
Isaac Brandon & Bros.....	1,100	
Fidanque Bros. & Co.....	600	
Piza Nephews & Co.....	500	
Rosenthal Sons & Co.....	600	
H. G. Barthold.....	600	50,100

AFRICANS.

JAN. 26.—By the <i>Kroonland</i> =Antwerp:		POUNDS.
A. T. Morse & Co.....		69,000
JAN. 26.—By the <i>Augusta Victoria</i> =Hamburg:		
George A. Alden & Co.....		11,000
JAN. 26.—By the <i>Saxonia</i> =Liverpool:		
Poel & Arnold.....		65,000
JAN. 27.—By the <i>Rotterdam</i> =Rotterdam:		
George A. Alden & Co.....		17,000
JAN. 28.—By the <i>Majestic</i> =Liverpool:		
George A. Alden & Co.....	22,500	
United States Rubber Co.....	11,500	34,000

AFRICANS—Continued.

JAN. 30.—By the <i>Belgravia</i> =Hamburg:			
Poel & Arnold.....	30,000		
George A. Alden & Co.....	11,500		
Robinson & Tallman.....	4,500	46,000	
FEB. 1.—By the <i>Etruria</i> =Liverpool:			
Poel & Arnold.....	49,000		
United States Rubber Co.....	6,500		
Robinson & Tallman.....	2,500	58,000	
FEB. 1.—By the <i>Minechra</i> =London:			
Henry A. Gould Co.....	6,500		
Poel & Arnold.....	2,400	9,000	
FEB. 5.—By the <i>Oceanic</i> =Liverpool:			
A. T. Morse & Co.....	39,000		
George A. Alden & Co.....	45,000	84,000	
FEB. 5.—By the <i>Blucher</i> =Hamburg:			
George A. Alden & Co.....	82,000		
A. T. Morse & Co.....	50,000		
Poel & Arnold.....	19,000		
Rubber Trading Co.....	8,500	154,500	
FEB. 8.—By the <i>Bovic</i> =Liverpool:			
Poel & Arnold.....	56,000		
FEB. 8.—By the <i>New York</i> =London:			
United States Rubber Co.....	30,000		
FEB. 8.—By the <i>Umbria</i> =Liverpool:			
Poel & Arnold.....	45,000		
United States Rubber Co.....	28,000		
A. T. Morse & Co.....	9,000	79,000	
FEB. 11.—By the <i>Vaderland</i> =Antwerp:			
Poel & Arnold.....	8,000		
FEB. 13.—By the <i>Celtic</i> =Liverpool:			
United States Rubber Co.....	140,000		
Poel & Arnold.....	13,000		
A. T. Morse & Co.....	17,000	170,000	
FEB. 15.—By the <i>St. Paul</i> =London:			
George A. Alden & Co.....	15,000		
FEB. 16.—By the <i>Ivornia</i> =Liverpool:			
George A. Alden & Co.....	42,000		
United States Rubber Co.....	28,000		
Poel & Arnold.....	16,000		
A. T. Morse & Co.....	7,000		
Rubber Trading Co.....	10,000	101,000	
FEB. 17.—By the <i>Kronland</i> =Antwerp:			
George A. Alden & Co.....	305,000		
Poel & Arnold.....	200,000		
A. T. Morse & Co.....	95,000		
To order.....	30,000	630,000	

AFRICANS—Continued.

FEB. 20.—By the <i>Cedric</i> =Liverpool:			
Poel & Arnold.....	13,000		
George A. Alden & Co.....	10,000		
A. T. Morse & Co.....	9,000	32,000	
EAST INDIAN.			
JAN. 25.—By the <i>Philadelphia</i> =London:			
George A. Alden & Co.....	5,600		
Poel & Arnold.....	2,000	7,000	
FEB. 1.—By the <i>Oro</i> =Singapore:			
A. T. Morse & Co.....	7,000		
Robert Brans & Co.....	4,500		
To order.....	3,500	15,000	
FEB. 8.—By the <i>New York</i> =London:			
Poel & Arnold.....	67,000		
Robinson & Tallman.....	4,500	71,500	
FEB. 17.—By the <i>Hermiston</i> =Singapore:			
Poel & Arnold.....	31,000		
William Wright & Co.....	4,500		
Rubber Trading Co.....	4,000		
Robert Brans & Co.....	3,500	46,000	
FEB. 20.—By the <i>Orono</i> =Singapore:			
To order.....	11,000		
Robert Brans & Co.....	8,500		
William Wright & Co.....	7,000	24,500	
PONTIANAK.			
FEB. 1.—By the <i>Oro</i> =Singapore:			
Robert Brans & Co.....	35,000		
FEB. 17.—By the <i>Hermiston</i> =Singapore:			
William Wright & Co.....	224,000		
George A. Alden & Co.....	60,000	284,000	
FEB. 20.—By the <i>Orono</i> =Singapore:			
William Wright & Co.....	110,000		
GUTTA-PERCHA AND BALATA.			
FEB. 1.—By the <i>Oro</i> =Singapore:			
W. B. Grace & Co.....	6,500		
FEB. 5.—By the <i>Blucher</i> =Hamburg:			
To order.....	4,500		
FEB. 13.—By the <i>Mantou</i> =London:			
To order.....	9,000		
FEB. 20.—By the <i>Orono</i> =Singapore:			
To order.....	2,000		

BALATA.

JAN. 25.—By the <i>Philadelphia</i> =London:			
Poel & Arnold.....	16,000		
JAN. 30.—By the <i>Belgravia</i> =Hamburg:			
Earle Brothers.....	2,500		
FEB. 5.—By the <i>Blucher</i> =Hamburg:			
De Sola Lobo & Co.....	4,500		
FEB. 13.—By the <i>Mantou</i> =London:			
Henry A. Gould Co.....	2,500		
FEB. 20.—By the <i>Piermonte</i> =Demarara:			
George A. Alden & Co.....	9,000		
Middletown & Co.....	5,000	14,000	

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—JANUARY.

Imports:	POUNDS.	VALUE.
India-rubber.....	4,795,010	\$3,242,109
Gutta-percha.....	25,631	16,443
Gutta-jelutong (Pontianak).....	1,632,239	50,460
Total.....	6,352,980	\$3,307,962
Exports:	POUNDS.	VALUE.
India-rubber.....	86,128	\$ 66,795
Reclaimed rubber.....	142,332	17,163
Rubber Scrap Imported.....	1,131,031	66,288

BOSTON ARRIVALS.

	POUNDS.
JAN. 11.—By the <i>Kansas</i> =Liverpool:	
George A. Alden & Co.—African....	2,375
JAN. 11.—By the <i>Oxonian</i> =Antwerp:	
George A. Alden & Co.—African....	79,037
JAN. 18.—By the <i>Philadelphia</i> =London:	
George A. Alden & Co.—African....	2,120
JAN. 19.—By the <i>Sachem</i> =Liverpool:	
Poel & Arnold—African....	11,119
JAN. 25.—By the <i>Canopic</i> =Liverpool:	
George A. Alden & Co.—African....	11,886
Total.....	109,486
(Value, \$75,135.)	

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.				GREAT BRITAIN.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
December, 1903.....	4,875,275	407,999	4,467,276	December, 1903.....	5,100,816	2,662,464	2,438,352
January-November.....	50,868,845	3,283,308	47,585,447	January-November.....	49,332,864	34,996,304	14,336,560
Twelve months, 1903.....	55,744,120	3,691,397	52,052,723	Twelve months, 1903....	54,433,680	37,658,768	16,774,912
Twelve months, 1902....	50,865,902	3,264,620	47,601,282	Twelve months, 1902....	46,970,000	32,676,112	14,293,888
Twelve months, 1901....	55,142,810	3,725,558	51,417,252	Twelve months, 1901....	52,245,088	32,904,704	19,340,384
GERMANY.				ITALY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
December, 1903.....	3,227,840	826,760	2,401,080	December, 1903.....	115,720	.....	115,720
January-November.....	31,062,900	10,387,520	20,675,380	January-November....	1,351,240	148,720	1,202,520
Twelve months, 1903....	34,290,740	11,214,280	23,076,460	Twelve months, 1903....	1,466,960	148,720	1,318,240
Twelve months, 1902....	33,063,360	13,719,200	19,344,160	Twelve months, 1902....	1,552,760	138,380	1,414,380
Twelve months, 1901....	28,649,280	11,027,500	17,621,780	Twelve months, 1901....	1,402,500	212,520	1,189,980
FRANCE.				AUSTRIA-HUNGARY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
December, 1903.....	1,550,120	950,180	599,940	December, 1903.....	169,620	5,060	164,560
January-November.....	15,368,100	8,680,980	6,687,120	January-November.....	2,614,040	27,060	2,586,980
Twelve months, 1903....	16,918,220	9,631,160	7,287,060	Twelve months, 1903....	2,783,660	32,120	2,751,540
Twelve months, 1902....	15,389,440	8,559,540	6,829,900	Twelve months, 1902....	2,634,060	15,620	2,618,440
Twelve months, 1901....	16,141,180	9,550,860	6,590,320	Twelve months, 1901....	2,643,740	25,080	2,618,660

NOTE.—German statistics include Gutta-percha, Balata, old rubber, and substitutes. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embraces the supplies for Canada consumption.

1904.

16,000

2,500

4,500

2,500

14,000

ICS.

VALUE.

1,242,100

15,443

50,400

1,307,952

66,785

17,263

66,288

POUNDS.

2,375

79,037

2,120

11,119

14,685

100,480

PORTS.

352

560

912

588

384

PORTS.

720

520

240

380

980

PORTS.

560

980

540

440

600

Exports